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PSITTACOSIS: EPIDEMIOLOGICAL CONSIDERATIONS WITH REFERENCE TO THE 1929–30 OUTBREAK IN THE UNITED STATES[1]

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Psittacosis of man has been reported for the United States by Vickery and Richardson, 1904, Scott, 1906, McClintock, 1925, and Sailer, 1927. The 1929–30 outbreak is, however, by far the most extensive yet reported for this country. Nevertheless it seems certain that this outbreak would largely have escaped detection as to its real nature had not the press brought the condition and its striking association with parrots before the public and the medical profession.

It is, therefore, impossible to determine to what extent the recent outbreak is exceptional; but if we are correct in concluding that the disease is endemic among tropical birds, and consider the frequency with which psittacosis has been reported in other countries, it seems probable that sporadic cases have occurred more frequently in the United States than has heretofore been realized.

THE AMERICAN OUTBREAK, 1929–30

We now have a record of 74 foci of infection which gave rise to 169 cases, with 33 deaths, from November 23, 1929, to May 7, 1930. These cases occurred in 15 States and the District of Columbia and do not include 16 laboratory infections, with two deaths nor 12 probable cases which were removed from two merchant ships entering our ports following exposure aboard ship to parrots purchased in Germany and Brazil.

Owing to the stress of other duties and to the scattered location of the outbreaks it was not possible to carry out a personal investigation of the various cases, except in a few instances. The information concerning the cases here reported was secured largely through the cooperation of State and local health officials and attending physicians, and we wish to express appreciation to all who have contributed to this work.

[1] Presented at the Twenty-eighth Annual Conference of State and Territorial Health Officers with the United States Public Health Service, Washington, D. C., June 18, 1930 (held jointly with the Forty-fifth Annual Conference of State and Provincial Health Authorities of North America).

IS CONTACT WITH BIRDS SIGNIFICANT?

Some persons, and even physicians, have expressed the belief that "parrot fever" is nothing but "ordinary pneumonia" associated with the presence of a parrot. This view of course neglects the fact that psittacosis does not present the combined epidemiological, clinical, X-ray, and pathological picture of any "ordinary pneumonia" seen in this country. Moreover, the reported cases were not simply associated with parrots but with *newly acquired* tropical birds which in nearly every instance *were ill*. That this selectivity was not dictated by the press is indicated by the fact that the Public Health Service has received scores of communications by letter, telegram, and telephone, inquiring whether apparently well birds which had been on hand for varying periods up to 30 years were dangerous.

Nevertheless, it was deemed desirable to determine the occurrence of illness among a control group of persons who had recently acquired apparently normal parrots. With this end in view, a random sample of 103 parrots were traced to their ultimate destinations. These birds were sold by the same dealers and during the same time, November and December, 1929, as were many of the incriminated parrots. Eighty-eight of the 103 parrots were described as apparently in perfect health, and among the families exposed to them there was not a single suspected illness reported.

The remaining 15 parrots of the series either had died or were killed on account of illness. One of these birds had given rise to six cases of typical psittacosis. There was no human illness reported from contacts with the 14 other sick birds, of which the character of illness is of course unknown.

SPECIES OF BIRDS INCRIMINATED

Parrots were associated with the development of 55 foci of disease, parrakeets with four, "love birds" three, canaries three, while in nine outbreaks exposure was to multiple species.[1]

DIRECTION OF THE INFECTION

In view of the notable association between psittacosis cases and ill birds it becomes desirable to inquire whether infection usually travels from bird to man or in the opposite direction, as some have suggested. That man is usually infected from birds seems indicated by the fact that the latter usually appeared ill and in many instances had actually died before symptoms appeared among members of the affected household. Moreover, the occurrence of synchronous household cases so frequently noted in this and other outbreaks of psittacosis is most readily explained by assuming a synchronous ex-

[1] The parrots were described as Amazons in 7 instances, South American 8, Panama 6, Cartagena 7, Mexican double-yellow head 3, yellow head 5, Mexican 1, Cuban 2, Porto Rican 1, Brazilian 2, "Parrots" 13. Shell parrakeets were involved in 2 outbreaks and "parrakeets" in 2.

posure to some common source of infection. That this common focus of infection is usually some type of parrot is indicated by the prompt subsidence of outbreaks which have occurred in this and other countries following the decreased traffic in climbing birds occasioned through publicity or official decree.

Again, if birds are actually the source of infection in psittacosis, employees of affected pet shops, as a class, might be expected to sicken earlier than do their patrons who somewhat later come in contact with the affected birds. It was possible to verify this hypothesis in one outbreak of 18 cases which occurred among employees and patrons of a pet shop. (Chart 1.)

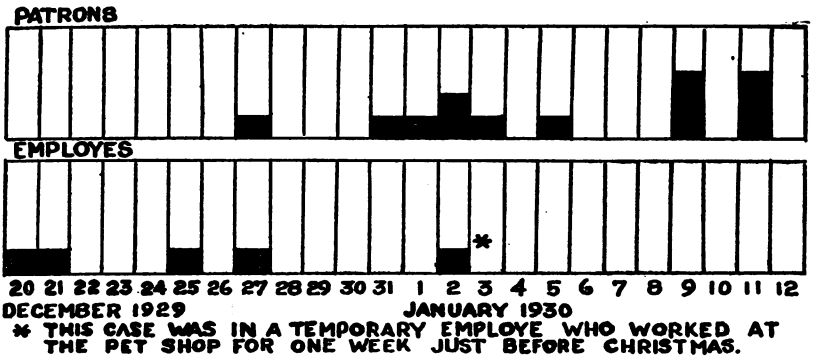

CHART 1.—Dates of onset of psittacosis among employees and patrons of an affected pet shop

And then, again, the fact that man is so rarely infected through contact with human psittacosis cases argues against the latter being a dangerous source of infection for birds, which are probably no more susceptible to the malady than are human beings.

IMPORTATION OF TROPICAL BIRDS

Information supplied by the Bureau of Biological Survey of the United States Department of Agriculture shows that from 50,000 to 60,000 birds of the parrot family and 300,000 to 350,000 canaries were imported into the United States during 1929.

Birds incriminated in the production of psittacosis (1929–30) are known to have come from Brazil, Colombia, Cuba, Nicaragua, Honduras, Germany, Trinidad, Salvador, Mexico, and Japan. The majority of these birds were imported by several large dealers in New York City, who, during November and December, 1929, received shipments from the first six named countries. It is possible that some of the incriminated birds might have been infected through contacts in the pet shops. It is believed, however, that this source of infection would be inadequate to explain the almost synchronous appearance of psittacosis in Argentina, Algeria, Germany, Austria, England, Holland, Czechoslovakia, Denmark, Switzerland, France, Spain,

Portugal, Canada, Hawaiian Islands, and the United States, unless it occurred in the shops at the sources of supply.

Furthermore, we have a record of 13 human cases which followed exposure to birds brought from Trinidad or Brazil, Cuba, and Germany by crews or passengers on different ships and from Mexico by rail. These birds did not pass through any pet shops in the United States. These considerations, together with the fact that sporadic outbreaks have been repeatedly reported in this and other countries during earlier years, leads one to the conclusion that psittacosis is a widely spread endemic disease among birds transported from the Tropics.

INFECTIVITY OF PSITTACOSIS

Bird to man.—The occurrence of sharp household outbreaks of psittacosis in homes harboring infected birds has been repeatedly observed and indicates that the disease is highly communicable from birds to man. The outbreak at the Hygienic Laboratory [1] reported by McCoy, 1930,[2] denotes a degree of infectivity approaching that of measles or smallpox. In this outbreak there were 11 cases developed among employees of the main laboratory building wherein the birds were housed. Only two of this number, however, had had direct contact with the parrots or had even entered the small rooms in which the birds were kept.

Where multiple cases develop in a household it frequently happens that the patients all become sick within a few days, thus indicating a synchronous infection even though the exposure to the birds has extended over a considerable period. This indicates that the infected birds are more dangerous at some periods than at others; and it is probable that this greater infectivity is dependent upon an active state of the disease. Infection, however, occasionally follows exposure to apparently well birds or to bird carriers.

One of our cases sickened on March 15 with a severe type of the disease following exposure to two shell parrakeets which were purchased just before Christmas, 1929. One bird was rather out of sorts shortly before March 15, the illness being attributed to eating gilt from a picture frame. It was apparently well after three or four days. Both birds are still under observation by the writer and appear perfectly healthy (June 15, 1930). The patient was an occasional visitor to the pet shop before her illness, but the proprietor of the shop claimed to have had no unusual illness or deaths among his birds and no other cases were traced to birds from this source.

Three other cases followed contact with a canary purchased on December 12, 1929, which was not apparently ill, but whose cage at

[1] Now the National Institute of Health.—Ed.
[2] Public Health Reports, Apr. 18, 1930, p. 843.

the store had hung near a parrot that appeared sick. Two of the patients had visited the pet shop when the canary was purchased and possibly may have contracted the infection there. These two cases sickened December 24 and 26, respectively. The third case had had no contact with birds other than the canary and sickened also on December 24.

Leichtenstern, Kerschensteiner, Krumeich, Hutchison, Rowlands, and Simpson, and others have also observed cases which followed contact with apparently well birds. The last-mentioned observers cite a case which followed a bite on the tongue by an African gray parrot which was ill when captured some 14 months previously, but which apparently recovered after a few weeks. The character of its illness is of course unknown. Pesch was able to transmit psittacosis experimentally from a recovered parrakeet by means of droppings and filtered organ extracts.

Bird to bird.—The cases of psittacosis which developed during the 1929–30 outbreak in the United States were largely attributable to contact with birds imported by several large New York dealers during November and December, 1929. During this period these dealers imported 2,100 "talking parrots," from which some 45 known foci of psittacosis resulted. Among a random sample of 103 of these birds which were sold there were 15 which subsequently died or were killed on account of illness, only one of which is known to have had psittacosis; while 88 of the birds showed no signs of illness and produced no human cases, notwithstanding the fact that most of them must at some time, and perhaps for considerable intervals, have been housed in the same quarters with infected birds. An even lower rate of infection is indicated for parrakeets and love birds, many of which must have been similarly exposed, since these same dealers during the same critical period imported 5,100 of these birds and yet only seven foci with 12 human cases are known to have resulted from them. Likewise, canaries seem to have largely escaped infection, since among 300,000 to 350,000 imported during 1929, many of which were probably exposed to infection in pet shops, there were only three instances, with a total of six human cases, reported in which canaries were held blamable. At the Hygienic Laboratory a number of parrots and shell parrakeets failed to develop detectable symptoms following exposure to supposedly psittacosis material, notwithstanding they were housed during the tests, January 16 to March 8, in the same room (in individual cages) with definitely ill and dying birds which served to infect people as early as January 25. Neither was there any spontaneous illness noted among a number of "normal birds" housed in an adjoining room.

In the recent outbreak several instances were noted where only one of two birds in the same cage sickened; others have noted similar

instances. For example, Maragliano placed two canaries and two parrots in the cage of an infected parrot, and one parrot sickened and died on the twelfth day, while the other and the two canaries remained apparently well. Leichtenstern cites a similar case where two canaries and two parrots were placed in the cage of an infected parrot and yet remained apparently well.

It is possible that this apparent insusceptibility of birds to infection is due to an active immunity gained through earlier attacks. However, the frequency with which birds suffer and die with psittacosis under some conditions of captivity, together with the absence of reported outbreaks among birds in nature or in the large, well-kept zoos of this country and of Europe, and in view of the absence of reported human cases from contact with such birds, rather speaks against this interpretation and for a naturally relatively low susceptibility of birds to the infection except under special conditions.

Bearing this consideration in mind, it is interesting to note that most of the recorded outbreaks of psittacosis (see review of outbreaks) have occurred in the temperate zone and during the cold months, and it may be that sudden changes of climate are of importance in reducing the general resistance of birds to infection.

It has also been stated that the early outbreaks of psittacosis followed an effort on the part of shippers to reduce the relatively high cost of modern transportation by crowding many birds into small and necessarily unhygienic cages. This tendency has increased until at present as many as 25 large parrots may be shipped in a box with one open side and with an allowance of approximately one-half cubic foot of space or less for each bird. If we are figuring air space the bulk of the birds own body must be subtracted from this already inadequate allowance. With many such crowded cages stored in the hold of a ship, proper sanitation is difficult. That many birds die in transit is well known, and it would seem that this crowding and insanitary condition must serve to depress the vitality of the survivors and favor the spread of psittacosis among them; for we and others have shown that the disease may be transmitted by means of food and water contaminated with the droppings of infected birds.

Man to man.—Instances of infection from patient to patient are rare but have been occasionally reported. Some of these purported instances are, however, questionable, because the infection was acquired following contact with patients in surroundings which had recently harbored the incriminated birds. The significance of contact with such surroundings is shown by the Hygienic Laboratory outbreak. In this outbreak there was, however, not a single case of contact infection among the physicians, nurses, attendants, relatives, or friends of

any of the 11 cases. There are, however, a few instances in which the infection does seem to have been transmitted from patient to patient.

One patient of our series had visited the bird department of a large store, where her sister was employed, on December 4, 5, or 6, 1929, and was at the store again on the 17th, but not in the bird department. The same day (December 17) she visited at the home of her sister who had developed symptoms on December 13. She also served as her nurse from December 19 to 24, the date of death. During this interval she collected the patient's sputum onto paper napkins but wore no gloves; she had an open sore on one of her hands at the time. She developed symptoms on December 28.

Another case was in a nurse who had had no known contact with tropical birds, but who had from February 2 to February 10 nursed a typical and fatal case of psittacosis; she sickened on February 21 with a typical severe attack.

Leichtenstern, Adamy, Bedson, Western, Simpson, Günther, Gastau, and others have reported similar instances. Hegler reported a remarkable instance in which several persons who were in attendance upon a case in a hospital developed the disease. Cases from human contact are, however, exceptional.

INCUBATION PERIOD

The interval from the first known exposure to infected birds to the onset of symptoms in the 169 cases here considered varied from 6 to 82 days. In 45 instances, however, the disease followed the first exposure by 6 to 15 days, which is usually considered to be the incubation period. There were, in addition, two cases which developed on the tenth day following a single exposure of two hours' duration in a home harboring an ill parrot and three human cases. In another instance a woman who visited for one day in an infected home also developed symptoms on the tenth day following.

SEX DISTRIBUTION OF CASES

Among 167 cases of known sex which occurred in the United States there were 105 females and 62 males, or 63 and 37 per cent of the total, respectively. This preponderance of cases among females is probably a reflection of the fact that in this country, exposure usually occurred in the home where women spend a relatively larger amount of their time than do the men. The care of the birds also commonly falls to the women. In the Argentine outbreak where exposure was largely from an exhibit of fancy birds, Barros noted the infection as being three times as prevalent among males as females. He states that men attended the exhibits more than did the women. The age distribution of cases is shown in Chart 2.

DIAGNOSIS AND SYMPTOMS

A history of exposure to recently acquired tropical birds, especially if ill, is of importance. The clinical picture, while varying in dif-

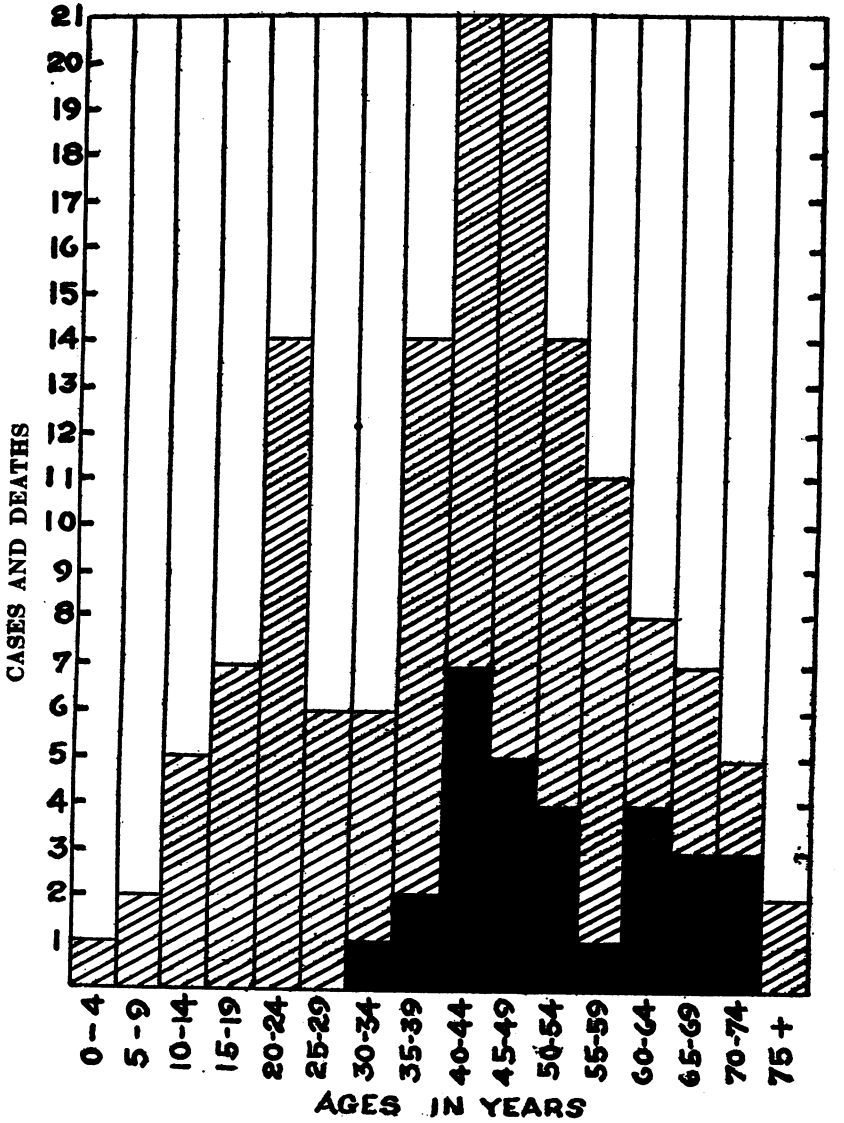

CHART 2.—Psittacosis cases and deaths by age groups. (Shaded areas represent cases; black areas, deaths)

ferent cases, is nevertheless strikingly uniform and most often confused with influenza and typhoid fever. Many excellent clinical reports are readily available; consequently we will not cite case histories.

The disease may begin suddenly with chilly sensations, fever, and headache, or these may appear after a few days during which the patient has not felt exactly well. The fever when first recorded is usually 100° to 102° F. and tends with irregular remissions to rise to a height of 103° to 105° during the second week. The pulse is likely to be slow, considering the temperature. Nosebleed is not uncommon. Focal lung lesions with physical signs may be present at the first examination or appear after three or four days. There is usually but little cough or expectoration early, but these may develop later. The cough is usually nonproductive. Chest pains may be present. The tongue, as a rule, presents a heavy white to brownish coat, with red edges, but may be cracked and dry. The appetite is lost and constipation is the rule. Abdominal distention is troublesome in many cases. Albuminuria is a very constant accompaniment after the disease is established, and retention may be present. "Rose spots" have been occasionally reported.

The blood count is usually normal or slightly above normal during the first few days, but a leucopenia is the rule later on. In one case the count was as low as 600 cells on the twentieth day of illness, but counts from 3,000 to 5,000 are more common. Delirium is common when the temperature is high; stupor may be present. Dreams are likely to disturb the sleep, and insomnia may be troublesome. The fever may terminate after about eight days or continue for three weeks or more. Table 1 shows the relative frequency of occurrence of the more common symptoms as reported for the 169 cases.

TABLE 1.—*Most frequently recorded symptoms in 169 cases*

Symptom	Number of cases in which present	Number of cases in which absent	Unknown	Symptom	Number of cases in which present	Number of cases in which absent	Unknown
Headache	112	13	44	Constipation	87	36	46
Malaise	107	14	48	Coated tongue	85	20	64
Cough	106	23	40	Delirium or stupor	48	69	52
Chills	98	25	46	Nosebleed	25	96	48
Pains other than head	95	28	46	Diarrhea	13	110	46
Anorexia	92	24	53				

Relapses.—Relapses are not uncommon. Three of the 11 Hygienic Laboratory cases suffered relapses during the first three weeks following the return of the temperature to normal. The relapses began with symptoms similar to the original onset but ran milder courses, the temperature rising to 100°–102° F. and then gradually falling in a few days. A relapse occurred in another case in Washington after three weeks of normal temperature. These four relapses occurred among some 13 cases treated with convalescent serum, and one wonders if this form of treatment predisposes to relapse.

Complications.—Phlebitis is the most common complication.

PROGNOSIS

Among 169 cases of psittacosis recorded in the recent outbreak, there were 33 deaths reported (19 per cent). It is possible, however, that other deaths occurred in this series, since many of our reports were secured prior to the termination of the illness. Age is an important factor in determining the outcome, children and young adults tending to have light attacks. There was not a death reported among 35 patients under 30 years of age, while approximately 24 per cent of patients over that age died.

Death is probably due to the pneumonic involvement in most cases, and occurs usually from the seventh to fifteenth day of illness; later deaths, however, occasionally occur and may be due to the loosening of a complicating venous thrombus. At least two deaths attributed to this cause occurred among the above-mentioned fatal cases.

PREVENTION

Theoretically the control of psittacosis in man is simple and consists in the avoidance of contact with tropical birds. Practically, however, it may be difficult permanently to prevent traffic in birds which are favored as pets by a considerable group of our population. Methods aimed toward rendering the traffic harmless rather than toward preventing it are therefore desirable. Strictly scientific information is, however, not yet available for the guidance of such a plan.

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ACUTE RESPONSE OF GUINEA PIGS TO VAPORS OF SOME NEW COMMERCIAL ORGANIC COMPOUNDS

VI. DIOXAN[1]

By W. P. Yant, *Supervising Chemist;* H. H. Schrenk, *Chemist in Charge, Toxicological and Biochemical Laboratory;* C. P. Waite, *Assistant Surgeon,*[2] and F. A. Patty, *Assistant Physiological Chemist, Health Laboratory Section, Pittsburgh Experiment Station, United States Bureau of Mines*

This report on the acute response of guinea pigs to dioxan gas is the sixth of a series of similar reports which deal with studies pertinent to evaluating the hazards involved in exposure to some chemical products which have recently reached, or promise to reach, important domestic and industrial use. The first report of the series dealt with ethylene dichloride,[3] the second with ethyl benzene,[4] the third with "Cellosolve" (ethylene glycol monoethyl ether),[5] the fourth with ethylene oxide,[6] and the fifth with vinyl chloride.[7]

The investigation was undertaken at the request of the Carbide & Carbon Chemicals Corporation and was conducted jointly with the

[1] Published by permission of the Director, U. S. Bureau of Mines.

[2] Assistant surgeon, U. S. Public Health Service, detailed to the Bureau of Mines.

[3] Sayers, R. R., Yant, W. P., Waite, C. P., and Patty, F. A.: Acute Response of Guinea Pigs to Vapors of Some New Commercial Organic Compounds. I. Ethylene Dichloride. Pub. Health Reports, vol. 45, No. 5, Jan. 31, 1930, pp. 225–239. (Reprint No. 1349.)

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[6] Waite, C. P., Patty F. A., and Yant, W. P.: Acute Response of Guinea Pigs to Vapors of Some New Commercial Organic Compounds. IV. Ethylene Oxide. Pub. Health Reports, vol. 45, No. 32, August 8, 1930, pp. 1832–1843. (Reprint No. 1401.)

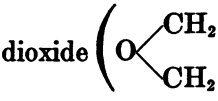
[7] Patty, F. A., Yant, W. P., and Waite, C. P.: Acute Response of Guinea Pigs to Vapors of Some New Commercial Organic Compounds. V. Vinyl Chloride. Pub. Health Reports, vol. 45, No. 34, August 22, 1930, pp. 1963–1971. (Reprint No. 1405.)

United States Bureau of Mines. The experiments were carried on at the Pittsburgh Experiment Station of the Bureau of Mines.

SCOPE OF WORK

The scope of the work included a study of the toxicity of dioxan and the physiological response to its vapors as determined by exposure of guinea pigs. Only acute effects as produced by a single exposure were studied. The experiments were planned to give information relative to the concentrations and periods of exposure which produce but slight response, moderate response, and serious response.

CHEMICAL AND PHYSICAL PROPERTIES

1, 4-Dioxan or diethylene dioxide  is the second ether of ethylene glycol. A detailed description of the chemical and physical properties, and probable uses of this new product have been given by Reid and Hofmann.[8] It is a colorless liquid miscible in all proportions with water and the ordinary organic solvents. It is quite stable, being little affected by acids, alkalies, or oxidizing agents, at ordinary temperatures. Its physical properties are as follows: Melting point, 11° C.; boiling point, 101.1° C.; density, 20° C., 1.0338; and vapor pressure 17, 28, 47 mm. Hg. at 10°, 20°, and 30° C., respectively. It forms a constant boiling mixture, 80 per cent dioxan and 20 per cent water, with a boiling point 86.8° to 86.9° C. at 742 mm. Hg.

The odor is faint and pleasant, described by some persons as similar to absolute ethyl alcohol.

SUGGESTED USES FOR DIOXAN

The following are suggested uses for dioxan: Solvent in the manufacture of lacquers, celluloid, and similar products where nitrocellulose, cellulose acetate, or other cellulosic esters or ethers are used; a wetting agent for materials not easily wet with water; a solvent for fats, oils, and greases; in dye baths and dye or stain compositions; preparation of varnishes, polishing compositions, paint and varnish removers, detergent and cleaning preparations, toilet preparations and cosmetics, cements, glues, shoe creams, emulsions; and as a preservative, fumigant, or deodorant.

[8] Reid, E. W., and Hofmann, H. E.: 1, 4-Dioxan. Ind. & Eng. Chem., vol. 21, 1929, pp. 695-697.

TEST APPARATUS

The apparatus for preparing dioxan-air mixtures and for exposing animals was the same as that described in a previous report dealing with ethylene dichloride,[9] with the exception that the constant feed device for introducing the liquid dioxan was a modification of the floating siphon described by Sullivan.[10]

COMPUTATION AND ANALYSIS OF GAS-AIR MIXTURES

The composition of the dioxan vapor-air mixtures was calculated from the quantity of liquid vaporized and the quantity of air contained in or flowing through the animal exposure chamber. The calculated composition was always checked by absorption of the vapors from a measured volume of the mixture by air-equilibrated activated charcoal and determining the gain in weight.

TEST PROCEDURE, DESCRIPTION, AND CARE OF ANIMALS

The test procedure and description and care of animals were the same as those described in the report dealing with ethylene dichloride.[11]

RESULTS OF TESTS

The detailed test data are too voluminous to be presented in this report, and only summarized results pertinent to symptoms, gross pathology, and fatality are given. Specimens of tissue were taken for microscopic examination, a report of which will be made later.

SYMPTOMS OF ANIMALS

Control animals.—No symptoms were exhibited by the 15 control guinea pigs used in these tests. Also, no deaths occurred.

Exposed animals.—The symptoms exhibited by exposed animals were irritation of the eyes and nose, retching movements, changes in the respiration, and apparent narcosis.

Table 1 gives the average period necessary to produce these symptoms by various concentrations of the vapor in air. When viewing the table it should be noted that the figures in parentheses indicate that the particular symptoms did not occur in the maximum period of exposure as given, whereas all the remaining values indicate the average time for occurrence of the symptoms.

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[9] See footnote 3.

[10] Sullivan, John D.: Device for Maintaining a Constant Rate of Flow of Liquids. Ind. & Eng. Chem., Anal. ed., vol. 1 (1929), p. 233.

[11] See footnote 3.

TABLE 1.—*Symptoms produced in guinea pigs exposed to vapors of dioxan*

Type of symptom	Concentration of vapor and period of exposure causing symptoms [1]				
	3.0	1.0	0.3	0.2	0.1
Nasal irritation, scratching at nose	[2] 1	[2] 1	[2] 1	[2] 1	[2] 1
Eye irritation, squinting, lacrimation	[2] 1	[2] 1	8	5	[3] (480)
Retching movements or marked expiratory effort, spasmodic contraction of abdominal wall, head lifted, mouth open	2–10	19–27	[3] (480)	[3] (480)	[3] (480)
Changes in respiration:					
Dyspnea	45–116	[3] (480)	[3] (480)	[3] (480)	[3] (480)
Shallow, rapid	75–123	[3] (480)	[3] (480)	[3] (480)	[3] (480)
Gasping	116	[3] (480)	[3] (480)	[3] (480)	[3] (480)
Shallow, slow	508–540	[3] (480)	[3] (480)	[3] (480)	[3] (480)
Narcosis—fall to sides, remain quiet	87–141	[3] (480)	[3] (480)	[3] (480)	[3] (480)

[1] Concentration of vapors in per cent by volume; time in minutes.
[2] Evident almost immediately—intensity increased with increasing concentration.
[3] Not observed during maximum exposure as given in parentheses.

Signs of nasal irritation manifested by the animals in scratching at the nose were noted in all the concentrations from 0.1 to 3.0 per cent by volume, inclusive, and were evident as soon as the animals were put on test. The intensity of the irritation was apparently related directly to the concentration of the vapor, but decreased in apparent intensity as the exposure to a particular concentration was prolonged.

Eye irritation as shown by squinting and lacrimation was also observed in all concentrations of the vapor used, except the lowest (0.1 per cent). This effect of the vapors also apparently increased in intensity with an increase in concentration of the vapors, but, as in the case of nasal irritation, it also decreased in apparent intensity as the time of exposure to a particular concentration was prolonged.

The retching movements noted consisted in spasmodic contractions of the abdominal muscles accompanied by a lifting of the head with the mouth held open. It resembled an attempt to vomit or a forceful expiratory effort. A similar symptom has been noted as occurring on exposure of guinea pigs to vapors of other commercial organic compounds.[12] This retching movement was noted only on exposure to 3.0 and 1.0 per cent vapors. It did not occur in all the pigs, was irregular in its time of occurrence, and ceased when the pigs were in an apparent unconscious condition.

Changes in the respirations and narcosis were noted only in the pigs exposed to 3.0 per cent vapors for a period of three hours or more. As near as could be ascertained, the respirations were first labored, then became shallow and rapid, during which time occasional gasping was noted; and as a terminal condition the respirations became shallow and slow until death ensued.

[12] See footnote 3.

The narcosis or apparent unconsciousness was produced within 87 to 141 minutes' exposure to 3.0 per cent vapors. It was usually preceded by a period not very well definable in which the pigs were unsteady, and staggered on attempting to walk.

SYMPTOMS EXPERIENCED BY MEN

Five persons were exposed for one minute to air containing 0.55 per cent by volume of dioxan vapor. The symptoms noted were as follows: Irritation to the eyes resulting in blinking, squinting, and lacrimation. A burning sensation was present in the nose and throat. The odor and burning sensation in the nose and throat were similar to that experienced in breathing concentrated vapors of ethyl alcohol. Three of the subjects noticed a slight vertigo which disappeared quickly after leaving the vapor-air mixture.

The same five persons were exposed to air containing 0.16 per cent of dioxan vapor for a period of 10 minutes. They noted an immediate slight burning of the eyes accompanied by lacrimation; also slight irritation of the nose and throat. The alcohol-like odor of dioxan was easily noticeable at first, but decreased in intensity with continued exposure. Lacrimation and nasal irritation persisted throughout the test. No vertigo was noted. One person complained of "upset stomach" after exposure. The atmosphere was not intolerable but easily noticeable.

GROSS PATHOLOGY

Control animals.—Fifteen control animals were killed for autopsy. They were taken from the same stock and selected in the same manner as the animals used for exposure to dioxan-air mixtures. No gross pathological changes resembling those found in the animals exposed to vapors were observed.

Exposed animals.—The pathological findings in animals that died during exposure (see fig. 1 for condition of exposure) were congestion and edema of the lungs, with a congestion of the surface vessels of the brain. The lungs were deep pink in color, and a bloody fluid exuded from cut section. Opening of the trachea and bronchi revealed the presence of small quantities of a frothy serous exudate and an injection of the vessels of the lining mucous membrane. The hyperemia of the brain was rather pronounced and easily detected in these cases.

The findings of the animals that were killed immediately after test, following exposure to conditions that caused death to the majority of the group within one to eight days (see fig. 1 for conditions of exposure) were congestion and edema of the lungs, similar to that previously described, hyperemia of the surface of the brain, and paleness of the liver on the surface and cut section. Those animals that died within one day showed the same findings with fairly well-described areas of congestion throughout the lungs, and a few small hemorrhagic areas

in the mucous membrane of the stomach. The animal that died two days after exposure showed a beginning broncho-pneumonia in the lungs, with a severe congestion of the surface vessels of the brain. The findings in the animals that were killed one day after exposure were similar to those in the animals that were killed immediately after test.

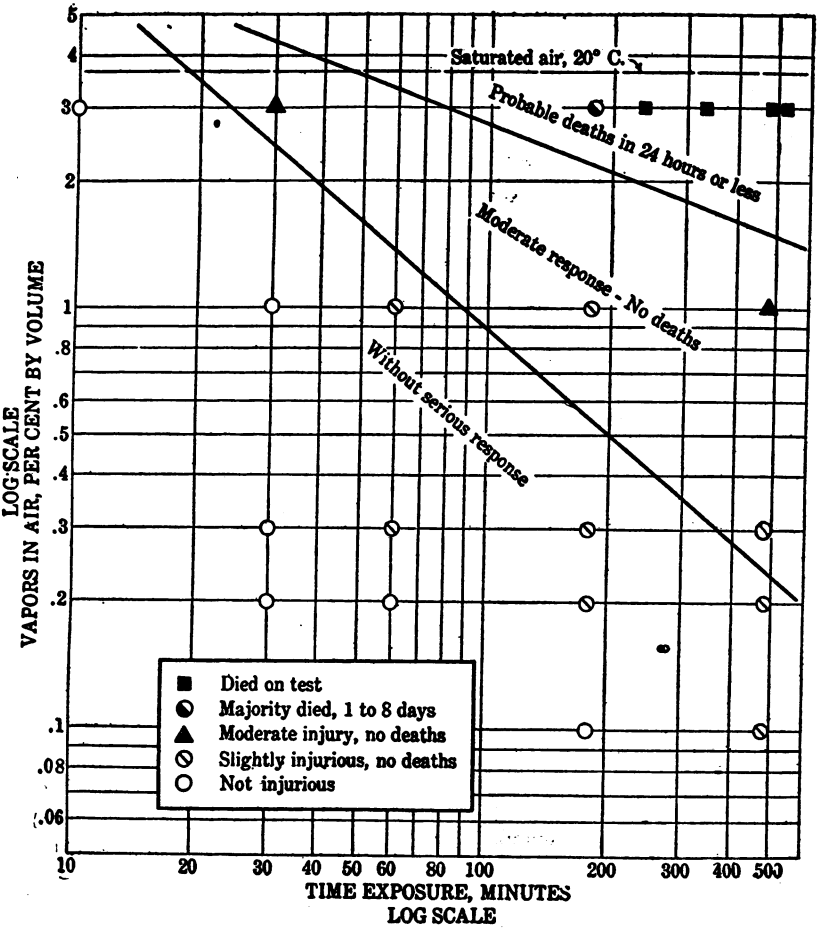

FIGURE 1.—Acute effects of exposure of guinea pigs to dioxan vapors in air

The findings in the animals killed immediately after exposure to conditions (see fig. 1 for condition of exposure) that did not cause death but produced what was classified as moderate injury, were hyperemia of the lungs and large air passages and hyperemia of the surface of the brain. The animals killed four to five days later usually showed patches of congestion in the lungs, and a hyperemia of the surface of the brain. The autopsies performed 9 to 10 days after exposure were negative for any gross pathological manifestations.

The findings of the animals killed immediately after exposure to conditions that did not cause death but produced slight injury (see fig. 1 for conditions of exposure) were a hyperemia of the lungs such as might be expected from a mild irritation. The pigs autopsied 4 to 6 days after exposure were negative for gross pathological changes except in 4 cases of a total of 14, in which small areas of congestion were found in the lungs. The pigs autopsied 8 to 10 days after exposure were negative for gross pathological changes except a few cases of hyperemia areas of congestion in the lungs.

DISCUSSION OF PATHOLOGY

Dioxan vapor is a very mild lung irritant. This is probably its chief action from the standpoint of producing pathological changes. An effect on the central nervous system is manifested by the symptoms and the hyperemic appearance of the vessels of the brain. The brain pathology is, however, very moderate from the standpoint of visible gross damage.

FATALITY AND SUMMARY OF PHYSIOLOGICAL RESPONSE

A summary of the fatality and response of guinea pigs exposed to various concentrations of dioxan in air is shown graphically in Figure 1, and given in conventional degrees of response in Table 2. The results of each experiment are designated by a symbol which represents one of five different degrees of severity. With the exception of concentrations causing death during exposure for which the results obtained for individual animals are given, the selected symbol describes the results obtained for at least one-half the individual animals, and in most cases the results for the majority of a group (at least three and usually six animals) exposed to a given condition.

It will be noted from the legend on Figure 1 that the five degrees of response are as follows:

1. Died on test.
2. Majority died, one to eight days.
3. Moderate injury, no deaths.
4. Slightly injurious, no deaths.
5. Not injurious.

In addition to representing the response of each group by symbols, the symbols have been separated into three general fields or zones of probable response, namely:

1. Probable death, 24 hours or less.
2. Moderate response, no deaths.
3. Without serious response.

Table 2 gives the concentrations which produce the degrees of response generally reported in the literature dealing with noxious

gases. These data may be compared with toxicological data given in the literature for other compounds.[13] [14] [15] [16] [17]

TABLE 2.—*Acute effects of exposure of guinea pigs to dioxan vapor in air*

Effects of exposure after various periods of time	Concentration, per cent by volume
1. Kills in a very short time	(1)
2. Dangerous to life in 30 to 60 minutes	(1)
3. Dangerous to life after several hours' exposure	1.5-3.0
4. Marked symptoms in 30 to 60 minutes	.6-.8
5. Maximum amount for 60 minutes without marked symptoms	.4-.5
6. Maximum amount for several hours without marked symptoms	.3-.4
7. Maximum amount for several hours with but slight or no symptoms	.2-.3

[1] Not produced by 3 per cent dioxan vapor in air, which is approximately 80 per cent of saturation value for air at 20° C.

CAUSE OF DEATH DURING AND FOLLOWING EXPOSURE

It is not clear whether the cause of death was irritation of the lungs or a state of narcosis which terminated in death. With the exception of one group of animals, death either occurred during exposure or the animals recovered. In the exceptional case (exposure to 3 per cent for three hours) the animals were in an apparent state of marked narcosis at the end of the exposure and did not fully recover from that condition in two days following, during which death occurred. They remained on their sides, making feeble attempts to regain a normal position. In many respects the symptoms resembled the sequela of profound asphyxia.

HEALTH HAZARDS FROM DIOXAN VAPOR

The physiological response of guinea pigs to dioxan vapor indicates that the hazard to health from breathing contaminated air is slight. This of course presumes ordinary conditions of ventilation and reasonable conditions of exposure, and excludes such conditions as exposure to the air confined over dioxan liquid in tanks, other confined spaces, or localized places as open tanks or vats where the air would become saturated with the vapor. The health hazards from dioxan vapor are further mitigated by the warning response manifested as eye and nose irritation when the gas is present in concentrations below those which cause harm. After but a few minutes' exposure to concentrations of 0.2 per cent the pigs exhibited signs of

[13] See footnotes 3, 4, 5, 6, 7.

[14] Cotton, R. T., and Young, H. D.: The Use of Carbon Dioxide to Increase the Insecticidal Efficiency of Fumigants. Proc. Entomological Soc. of Washington, vol. 31, 1929, pp. 97-102.

[15] Sayers, R. R., Yant, W. P., Thomas, B. G. H., and Berger, L. B.: Physiological Response Attending Exposure to Vapors of Methyl Bromide, Methyl Chloride, Ethyl Bromide, and Ethyl Chloride. Pub. Health Bull. No. 185, 1929, 56 pp.

[16] International Critical Tables, first edition, 1927, vol. 2, p. 318. Also see errata sheet, vol. 2.

[17] Henderson, Yandell, and Haggard, Howard W.: Noxious Gases. American Chemical Society Monograph No. 35, 1927, Chemical Catalog Co., New York.

the warning response by scratching their noses and by squinting and lacrimation. Persons exposed to 0.16 per cent observed an immediate slight burning of the eyes accompanied by lacrimation, and when exposed to 0.55 per cent there was an immediate marked degree of the same symptoms with the addition of a burning sensation in the throat. Since an exposure of two to three hours to 3 per cent dioxan vapor (air approximately 80 per cent saturated at 20° C.) was required to kill guinea pigs, and eight hours' exposure to 1 per cent vapor in air did not cause death, it appears that persons would not voluntarily tolerate atmospheres which would cause serious acute poisoning and that no acute trouble will be experienced if the symptoms of eye and nasal irritation are regarded as a warning to avoid further exposure.

As far as the writers know, the inflammable limits of dioxan vapor have not been determined, but the Bureau of Mines is now undertaking this determination. From a theoretical consideration and comparison with other compounds, it is estimated, however, that the lower inflammable limit would be in the range of 1 to 1.5 per cent vapor in air by volume or, in general, similar to the vapor of such compounds as gasoline and benzene. It is thus very probable that the hazards to life from inflammable mixtures exceed the hazards from acute poisoning; but, as in the case of poisoning, they are also mitigated by the warning properties of the vapor.

ACKNOWLEDGMENTS

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SUMMARY AND CONCLUSIONS

The acute physiological response of guinea pigs to air containing dioxan vapor was determined. The concentration of vapor and periods of exposure ranged from those which produced death to those which caused no apparent effect after several hours' exposure. The symptoms, gross pathology, and fatality are given, with a discussion of potential hazards.

1. The symptoms are principally those of eye and nasal irritation, with signs of lung irritation after long exposure, and narcosis with high concentration.

2. The principal gross pathological findings were congestion and edema of the lungs and hyperemia of the brain.

3. Because of the comparatively low vapor pressure of dioxan it is not possible to attain concentrations in air at 20° C. which will kill guinea pigs in less than two to three hours' exposure. Concentrations of 1 per cent did not cause death after eight hours' exposure.

4. Dioxan vapor possesses warning properties manifested as eye, nose, and throat irritation. Persons exposed to 0.16 per cent in air by volume immediately experienced a slight irritation of the eyes and nose, with lacrimation. Exposure to 0.55 per cent produced a marked and discomforting degree of the same symptoms with the addition of a burning sensation in the throat.

5. Considering the comparatively low toxicity of dioxan vapor and the warning intensity of concentrations below those which produced serious harm to guinea pigs, it appears that health hazards from breathing the vapors are slight under ordinary conditions of usage and reasonable exposure. As in the case of practically all comparatively nontoxic volatile liquids, however, dioxan presents a hazard to life under conditions of exposure to air confined over the liquid in tanks, vats, and similar places where high concentrations would accumulate.

THE LOSS OF LIGHT IN NEW YORK CITY DUE TO SMOKE

The contamination of the atmosphere by smoke from the chimneys of private houses, office buildings, industrial plants, steam engines, tugs, and steamships has become a serious matter in several of the larger cities of the United States. The presence in the air of large numbers of particles of soot and ash, and of appreciable amounts of sulphuric acid and other impurities, results in injury to trees and plants and in economic loss, and is a detriment to health.

Since the injury to health is due, in part, to the loss of daylight, and since the loss of daylight is a measure of the smokiness of the atmosphere, it seemed desirable to determine, as far as possible, the exact amount of light which is lost because of smoke in a large city in different seasons of the year and at different hours of the day, and also the extent to which the loss of light is affected by the height, shape, and density of the smoke layer, the humidity of the air, the velocity and direction of the wind, and by other factors.

A favorable opportunity for such a study offered itself in New York City during the year 1927, since simultaneous records of daylight could be conveniently made on the roof of the United States Marine Hospital at 67 Hudson Street, at the lower end of Manhattan Island, where the air was unusually smoky, and on the roof of a building at the United States quarantine station on Hoffman Island in lower

New York Bay, about 9 miles south of the hospital, where the air was comparatively clear. The results of this study are described in Public Health Bulletin No. 197.[1]

The instruments used were of the type which have been in use in Washington, D. C., by the United States Public Health Service for recording daylight since July, 1924. They consisted of photoelectric cells and recording potentiometers.

The photoelectric cell was placed on the roof of the building where the study was to be made, and the recording potentiometer was placed in a convenient position within the building. The platform was of such height that no shadows were cast upon the cell at any season of the year, and was also so constructed that the cell was accessible, so that its glass surface could be kept clean. The cell at Hudson Street was about 79 feet above the street level and 93 feet above mean high water. The cell on Hoffman Island was about 35 feet above the ground and 40 feet above high water.

Comparison of the results obtained at the two places showed that there was a large relative loss of light at the Hudson Street hospital due to smoke. In some cases the average hourly or daily loss was greater than 50 per cent. The average percentage loss for the whole year was 16.6 for clear days, 34.6 for cloudy days, and 21.5 for all days. The results showed that the loss of light depends, among other things, upon the altitude of the sun, upon the nature of the daylight—whether from a clear or a cloudy sky, upon the relative humidity of the air, and upon the velocity of the wind.

The effect of the altitude of the sun upon the percentage loss of light was shown clearly in the variation of the percentage loss with the hour of the day. The average percentage loss throughout the year was 30.2 at 8.30 a. m., 16.5 at 1.30 p. m., and 21 at 3.30 p. m. The average monthly percentage losses of light showed no marked seasonal effect but did show a marked relation to the average monthly relative humidities, the percentage losses usually increasing and decreasing with the relative humidities. For clear days the greatest average monthly percentage loss was 23.1 in November and the least 12.1 in May, with corresponding average relative humidities of 64.6 and 39 per cent. For cloudy days these values were 52.7 in September and 24.6 in December, with corresponding average relative humidities of 99.4 and 85.9 per cent.

Other conditions being the same, the average percentage loss of light was greater for cloudy days, or cloudy hours, than for clear days, or clear hours; the percentage loss being about 1.5 times as great for

[1] Studies in Illumination. III. A Study of the loss of light due to smoke on Manhattan Island, New York City, during the year 1927, especially in its relation to the nature of the weather, the relative humidity of the air, and the velocity and direction of the wind. By James E. Ives, physicist, United States Public Health Service.

cloudy days as for clear days for relative humidities between 40 and 80 per cent and for wind velocities between 10 and 19.9 miles per hour. For the same kind of sky, clear or cloudy, the average percentage loss of light increased with increase of relative humidity. For a clear sky the average percentage loss was twice as great for a relative humidity of 65 per cent as for 35 per cent. For a cloudy sky the increase was not so great. The percentage loss of light was also found to decrease as the velocity of the wind increased.

PUBLIC HEALTH SERVICE PUBLICATIONS

A List of Publications Issued During the Period July, 1929–June, 1930

There is printed herewith a list of publications of the United States Public Health Service issued during the period July, 1929–June, 1930.

The most important articles that appear each week in the Public Health Reports are reprinted in pamphlet form, making possible a wider and more economical distribution of information that is of especial value and interest to public-health workers and the general public.

All of the publications listed below except those marked with an asterisk (*) are available for free distribution and, as long as the supply lasts, may be obtained by addressing the Surgeon General, United States Public Health Service, Washington, D. C. Those publications marked with an asterisk are not available for free distribution but may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., *at the prices noted.* (No remittances should be sent to the Public Health Service.)

Reprints from the Public Health Reports

1296. Meningococcus meningitis and measures for its control. By G. W. McCoy. July 5, 1929. 5 pages.

1297. Studies on the biochemistry of sulphur. iii. Chemical groups involved in the naphtho-quinone reaction for cysteine and cystine. By M. X. Sullivan and W. C. Hess. July 5, 1929. 9 pages.

1298. Current studies of undulant fever. By H. E. Hasseltine. July 12, 1929. 8 pages.

1299. A study of lead poisoning in a storage-battery plant. By Leonard Greenburg, A. A. Schaye and Herman Shlionsky. July 12, 1929. 33 pages.

1300. Typhus fever in the United States. By Kenneth F. Maxcy. July 19, 1929. 8 pages.

1301. A study of the relation between mental and physical status of children in two counties of Illinois. By Grover A. Kempf and Selwyn D. Collins. July 19, 1929. 42 pages.

1302. Points to be considered in case of a poliomyelitis epidemic. By J. P. Leake. July 26, 1929. 4 pages.

1303. Economic status and the incidence of illness. Gross and specific illness rates by age and cause among persons classified according to family economic status. Hagerstown morbidity studies No. X. By Edgar Sydenstricker. July 26, 1929. 13 pages.
1304. The rôle of the vaccination dressing in the production of postvaccinal tetanus. By Charles Armstrong. August 2, 1929. 15 pages.
1305. Endemic typhus of the Southeastern United States. The reaction of the white rat. By Kenneth F. Maxcy. August 9, 1929. 9 pages.
1306. Outline of project for the study of negro health in Tennessee. By E. L. Bishop. August 9, 1929. 5 pages.
1307. Report of the departmental committee on morphine and heroin addiction to the British ministry of health. A review. By Walter L. Treadway. August 16, 1929. 6 pages.
1308. Current malaria studies with special reference to control measures. By L. L. Williams, Jr. August 16, 1929. 4 pages.
1309. Postvaccinal encephalitis. By Charles Armstrong. August 23, 1929. 4 pages.
1310. The seasonal and regional incidence of types of malaria parasites. By M. A. Barber and W. H. W. Komp. August 23, 1929. 11 pages.
1311. Cancer as a public health problem. By James Ewing. August 30, 1929. 9 pages.
1312. Differential fertility according to economic status. Live birth and stillbirth rates among married women of different ages classified according to economic condition. Hagerstown morbidity studies No. XI. By Edgar Sydenstricker. August 30, 1929. 6 pages.
1313. Chloro-phenol tastes and odors in water supplies of Ohio River cities. By H. W. Streeter. September 6, 1929. 8 pages.
1314. The malaria-parasite index of school children in Leflore County, Miss. By M. A. Barber and W. H. W. Komp. September 6, 1929. 6 pages.
1315. A proposed plan for the establishment of a morbidity registration area. By R. C. Williams. September 13, 1929. 4 pages.
1316. Sickness among industrial employees during the first three months of 1929. By Dean K. Brundage. September 13, 1929. 4 pages.
1317. Experimental studies of natural purification in polluted waters. I. Apparatus and technique for the study of biochemical and other oxidations in liquids. By Emery J. Theriault and C. T. Butterfield. September 20, 1929. 16 pages.
1318. A county-wide sanitary and health survey. By Milford E. Barnes. September 27, 1929. 16 pages.
1319. Method of preparing and examining thick films for the diagnosis of malaria. By M. A. Barber and W. H. W. Komp. September 27, 1929. 12 pages.
1320. A study of rural school ventilation. The school ventilation study in Cattaragus County, N. Y., 1926–27. By Thomas J. Duffield. October 4, 1929. 28 pages.
1321. Public health service publications. A list of publications issued during the period July, 1928–June, 1929. October 4, 1929. 6 pages.
1322. Breeding places of Anopheles in the Yazoo-Mississippi Delta. By M. A. Barber and W. H. W. Komp. October 11, 1929. 6 pages.
1323. Heart disease. A public health problem. By Taliaferro Clark. October 11, 1929. 5 pages.
1324. A study of the efficiency of dust-removal systems in granite-cutting plants. By J. J. Bloomfield. October 18, 1929. 18 pages.
1325. The history of malaria in the United States. By M. A. Barber. October 25, 1929. 13 pages.

1326. The use of stearates (calcium and aluminum) as diluents for Paris green in Anopheles control. A preliminary report. By A. F. Dolloff. October 25, 1929. 8 pages.
1327. Vaccine virus pneumonia in rabbits. By Charles Armstrong and R. D. Lillie. November 1, 1929. 13 pages.
1328. Experimental studies of natural purification in polluted waters. II. Development of a suitable dilute medium. By C. T. Butterfield. November 1, 1929. 12 pages.
1329. Fatty degeneration of the liver and kidneys in the dog apparently associated with diet. A preliminary note. By W. H. Sebrell. November 8, 1929. 5 pages.
1330. Further observations on the epidemiology of narcotic drug addiction. By W. L. Treadway. November 8, 1929. 4 pages.
1331. A study of negro infant mortality. By Amanda L. Stoughton and Mary Gover. November 8, 1929. 27 pages.
1332. A study of the pellagra-preventive action of canned salmon. By Joseph Goldberger and G. A. Wheeler. November 15, 1929. 4 pages.
1333. City health officers, 1929. Directory of those in cities of 10,000 or more population. November 15, 1929. 16 pages.
1334. State and insular health authorities, 1929. Directory, with data as to appropriations and publications. November 15, 1929. 23 pages.
1335. Public health organization and administration in Hamburg, Germany. By J. G. Townsend. November 22, 1929. 20 pages.
1336. Experimental studies of natural purification in polluted waters. III. A note on the relation between food concentration in liquid media and bacterial growth. By C. T. Butterfield. November 22, 1929. 8 pages.
1337. Notes on the results of trachoma work by the Indian Service in Arizona and New Mexico. By H. J. Warner. November 29, 1929. 8 pages.
1338. Leprosy with evidences of abnormalities in carbohydrate metabolism. By N. E. Wayson, L. F. Badger, and Margaret M. Dewar. December 6, 1929. 13 pages.
1339. Cooperative rural health work of the Public Health Service in the fiscal year 1929. By L. L. Lumsden. December 6, 1922. 21 pages.
1340. Health and scholastic attainment. By H. S. Diehl. December 13, 1929. 10 pages.
1341. Whole-time county health officers, 1929. December 13, 1929. 8 pages.
1342. Observations on the treatment of leprosy in Hawaii. By N. E. Wayson. December 20, 1929. 16 pages.
1343. The legal phases of milk control. By James A. Tobey. December 20, 1929. 8 pages.
1344. The National Leper Home. (United States marine hospital) Carville, La. Review of the more important activities during the fiscal year ended June 30, 1929. By O. E. Denney. December 27, 1929. 8 pages.
1345. Report on the International Conference for the Promotion of Infant Welfare held at Stockholm, Sweden, September 19–24, 1929. By E. A. Sweet. December 27, 1929. 8 pages.
1346. Apportionment of financial aid for county health work. By Elbridge Sibley and Joseph W. Mountin. January 3, 1930. 10 pages.
1347. Sickness among industrial employees. Frequency of disability lasting longer than one week from important causes among 163,000 persons in industry in 1928 and a summary of the morbidity experience from 1920 to 1928. By Dean K. Brundage. January 17, 1930. 10 pages.
1348. A new method of evaluating the potency of antineuritic concentrates. By Maurice I. Smith. January 17, 1930. 14 pages.

1349. Acute response of guinea pigs to vapors of some new commercial organic compounds. I. Ethylene dichloride. By R. R. Sayers, W. P. Yant, C. P. Waite, and F. A. Patty. January 31, 1930. 16 pages.
1350. A study of the blacktongue preventive value of leached commercial casein, together with a test of the blacktongue preventive action of a high protein diet. By Joseph Goldberger, G. A. Wheeler, L. M. Rogers, and W. H. Sebrell. February 7, 1930. 10 pages.
1351. Will the inhalation of siliceous dusts activate a partially healed focus of tuberculous infection? An experimental study. By Leroy U. Gardner. February 7, 1930. 8 pages.
1352. Sickness among industrial employees in the second and third quarters of 1929. By Dean K. Brundage. February 14, 1930. 4 pages.
1353. History taking in the early diagnosis of pulmonary tuberculosis. By G. H. Faget. February 14, 1930. 4 pages.
1354. Corrected fatality rates in public health practice. By Howard W. Green and George W. Moorehouse. January 24, 1930. 9 pages.
1355. Influenza-pneumonia mortality in a group of about 95 cities in the United States, 1920–1929. By Selwyn D. Collins. February 21, 1930. 46 pages.
1356. Report of a case of tularaemia contracted from a coyote (Canis Lestes) in New Mexico. By G. M. Kunkel. February 28, 1930. 2 pages.
1357. The Weil-Felix reaction in endemic typhus fever and in Rocky Mountain spotted fever. By R. R. Spencer and K. F. Maxcy. February 28, 1930. 8 pages.
1358. Resistance of Paramecium to heat as affected by changes in hydrogen-ion concentration and in inorganic salt balance in surrounding medium. By H. W. Chalkley. March 7, 1930. 9 pages.
1359. Further observations on the epidemiology of narcotic drug addiction. By W. L. Treadway. March 14, 1930. 12 pages.
1360. Public health survey of Pine Bluff, Ark. By Allan J. McLaughlin. March 14, 1930. 12 pages.
1361. Public health survey of Fort Smith, Ark. By Allan J. McLaughlin. March 21, 1930. 16 pages.
1362. Recoveries from leprosy. An analysis of the records of 65 cases. By Oswald E. Denney, Ralph Hopkins, and Frederick A. Johansen. March 28, 1930. 21 pages.
1363. Filterability of the infective agent of psittacosis in birds. By Charles Armstrong, G. W. McCoy, and Sara E. Branham. April 4, 1930. 2 pages.
1364. Mental disorders and the public health. By Hugh S. Cumming. April 4, 1930. 8 pages.
1365. Seamen with venereal disease in the port of New York. A cooperative study participated in by the American Social Hygiene Association, the New York Tuberculosis and Health Association, the Welfare Council of New York City, and the United States Public Health Service. Report prepared by Annabel M. Stewart. April 11, 18, and 25, 1930. 98 pages.
1366. Psittacosis: Rickettsia-like inclusions in man and in experimental animals. By R. D. Lillie. April 11, 1930. 6 pages.
1367. Accidental psittacosis infection among the personnel of the Hygienic Laboratory. By G. W. McCoy. April 18, 1930. 2 pages.
1368. A new meningococcus-like organism (*Neisseria flavescens* n. sp.) from epidemic meningitis. By Sara E. Branham. April 18, 1930. 5 pages.

1369. Act coordinating federal public health activities. (Public, No. 106, 71st Congress; H. R. 8807.) April 25, 1930. 4 pages.
1370. Effect of radiant energy on the skin temperatures of a group of steel workers. By J. J. Bloomfield, James E. Ives, and Rollo H. Britten. May 2, 1930. 13 pages.
1371. Observations on the possibility of methyl chloride poisoning by ingestion with food and water. By W. P. Yant, H. W. Shoaf, and J. Chornyak. May 9, 1930. 8 pages.
1372. Extent of rural health service in the United States, 1926–1930. By L. L. Lumsden. May 9, 1930. 17 pages.
1373. Hearing of school children as measured by the audiometer and as related to school work. A study of 710 children in Washington, D. C., and 1,150 in Hagerstown, Md. By E. Blanche Sterling and Elizabeth Bell. May 16, 1930. 14 pages.
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1375. An anemia of dogs produced by feeding onions. By W. H. Sebrell. May 23, 1930. 17 pages.
1376. Public health administration. By Allan J. McLaughlin. May 23, 1930. 10 pages.
1377. Sickness among industrial employees during the last three months of 1929. By Dean K. Brundage. May 23, 1930. 3 pages.
1378. The abusive use of narcotic drugs in Egypt. A review. By W. L. Treadway. May 30, 1930. 3 pages.
1379. Acute response of guinea pigs to vapors of some new commercial organic compounds. II. Ethyl benzene. By W. P. Yant, H. H. Schrenk, C. P. Waite, and F. A. Patty. May 30, 1930. 9 pages.
1380. Occupational mortality as indicated in life-insurance records for the years 1915–1926. By Rollo H. Britten. May 30, 1930. 9 pages.
1381. A study of the blacktongue preventive value of lard, salt pork, dried green peas, and canned haddock. By Joseph Goldberger, G. A. Wheeler, L. M. Rogers, and W. H. Sebrell. June 6, 1930. 12 pages.
1382. *Ctenocephalides*, new genus of fleas, type *Pulex canis*. By C. W. Stiles and Benjamin J. Collins. June 6, 1930. 2 pages.
1383. Undulant fever in Ware County, Ga. By George E. Atwood and H. E. Hasseltine. June 13, 1930. 12 pages.
1384. The visible effect of castor-oil soap on certain organisms. By R. R. Spencer. June 13, 1930. 7 pages.
1385. Medical service in Federal prisons. By W. L. Treadway. June 13, 1930. 7 pages.
1386. Psittacosis outbreak in a department store. By L. F. Badger. June 20, 1930. 7 pages.
1387. The National Institute of Health, successor to the Hygienic Laboratory. June 20, 1930. 4 pages.
1388. Results of the operation of the Standard Milk Ordinance in Mississippi. By A. W. Fuchs and H. A. Kroeze. June 20, 1930. 9 pages.
1389. Acute response of guinea pigs to vapors of some new commercial organic compounds. III. "Cellosolve" (Mono-Ethyl ether of ethylene glycol). By C. P. Waite, F. A. Patty, and W. P. Yant. June 27, 1930. 7 pages.
1390. A quantitative colorimetric reaction for the ergot alkaloids and its application in the chemical standardization of ergot preparations. By Maurice I. Smith. June 27, 1930. 15 pages.

Supplements to the Public Health Reports

75. Public health laws and regulations adopted during 1927. Compiled by William Fowler. 1930. 866 pages.
76. The notifiable diseases. Prevalence during 1928 in cities of over 100,000. 1929. 37 pages.
77. The notifiable diseases. Prevalence during 1928 in cities of 10,000 to 100,000 population. 1929. 97 pages.
78. Studies on the biochemistry of sulphur. IV. The colorimetric estimation of cystine in casein by means of the beta-naphtho-quinone reaction. By M. X. Sullivan. 1929. 13 pages.
79. The notifiable diseases. Prevalence in States, 1928. 1930. 72 pages.
80. Studies in the biochemistry of sulphur. V. The cystine content of phaseolin. By M. X. Sullivan. 1929. 7 pages.
81. Some Public Health Service publications suitable for general distribution. 1929. 17 pages.
82. Studies on the biochemistry of sulphur. VI. The cystine content of conphaseolin and phaseolin, the alpha and beta globulins of the navy bean (phaseolus vulgaris). By M. X. Sullivan and D. Breese Jones. 1930. 9 pages.
83. Public health laws and regulations adopted during 1928. Compiled by William Fowler. 1930. 192 pages.
84. Court decisions relating to public health. Digest of decisions abstracted and published currently in Public Health Reports during period 1926–1929. By William Fowler. 1930. 134 pages.

Public Health Bulletins

187. The health of workers in dusty trades. II. Exposure to siliceous dust (granite industry). By A. E. Russell, R. H. Britten, L. R. Thompson, and J. J. Bloomfield. July, 1929. 206 pages.
188. Studies in natural illumination in schoolrooms. III. Effect of clouds on daylight illumination and on daylight ratios. By A. F. Beal. November, 1929. 128 pages.
189. Studies upon leprosy. XLIX. Clinical observations of "early" or moderately advanced cases. By N. E. Wayson and L. F. Badger. September, 1929. 16 pages.
*190. Rules to be observed by patients at the marine hospital for tuberculosis, Fort Stanton, New Mexico. July, 1929. 19 pages. 5 cents.
191. Transactions of the Twenty-Sixth Annual Conference of State and Territorial Health Officers with the United States Public Health Service, held at St. Paul, Minn., June 8 and 9, 1928. October, 1929. 75 pages.
192. Endemic goiter. By Robert Olesen. December, 1929. 68 pages.
193. Studies of the efficiency of water purification processes. IV. Report on a collective survey of the efficiency of a selected group of municipal water purification plants located along the Great Lakes. By H. W. Streeter. November, 1929. 100 pages.
194. Transactions of the Twenty-Seventh Annual Conference of State and Territorial Health Officers with the United States Public Health Service, held at Washington, D. C., June 3 and 4, 1929. January, 1930. 117 pages.
195. Review of carbon monoxide poisoning. By R. R. Sayers and Sara J. Davenport. March, 1930. 97 pages.
196. Transactions of the Ninth Annual Conference of State Sanitary Engineers, held at Chicago, Ill., October 13 and 15, 1928. March, 1930. 68 pages.

Hygienic Laboratory Bulletin

154. Studies on Rocky Mountain spotted fever. By R. R. Spencer and R. R. Parker. January, 1930. 116 pages.

Annual Report

Annual report of the Surgeon General of the United States Public Health Service for the fiscal year 1929. 332 pages.

Miscellaneous Publication

11. Official list of commissioned and other officers of the United States Public Health Service; also list of United States marine hospitals, quarantine, immigration, and relief stations, and quarantine vessels. July 1, 1929. 76 pages.

Unnumbered Publications

* National negro health week program. This pamphlet is published annually, usually about the middle of March, for community leaders in an effort to suggest ways and means by which interested individuals and organizations may be organized for a concerted and effective attack upon the community's disease problems. Sixteenth annual observance. 1930. 8 pages. (Out of print.)
* National negro health-week poster. Sixteenth annual observance. 1930. (Out of print.)

Reprints from Venereal Disease Information

14. Gonorrhea in the female. By Walter M. Brunet and Robert L. Dickinson. From Venereal Disease Information, Vol. X, No. 4. 21 pages.
15. Venereal disease prevalence in St. Louis. By Willard C. Smith. From Venereal Disease Information, Vol. X, No. 5. 20 pages.
16. A study of venereal disease prevalence in Mississippi. By Elizabeth V. Milovich and W. D. Riley. From Venereal Disease Information, Vol. X, No. 5. 17 pages.
17. Congenital syphilis. By Jay F. Schamberg and Carroll S. Wright. From Venereal Disease Information, Vol. X, No. 10. 20 pages.
18. Gonococcus infection in the male. By P. S. Pelouze. From Venereal Disease Information, Vol. X, No. 11. 16 pages.
19. A census of cases of syphilis and gonorrhea under treatment in Philadelphia. By Mary S. Edwards. From Venereal Disease Information, Vol. XI, No. 1. 12 pages.
20. The treatment of acute complications of gonococcus and post-gonococcus infections with calcium gluconate. By Russell D. Herrold. From Venereal Disease Information, Vol. XI, No. 2. 8 pages.
21. Can congenital syphilis be prevented? By Eugene S. Coler. From Venereal Disease Information, Vol. XI, No. 5. 8 pages.

DEATHS DURING WEEK ENDED AUGUST 9, 1930

Summary of information received by telegraph from industrial insurance companies for the week ended August 9, 1930, and corresponding week of 1929. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

	Week ended Aug. 9, 1930	Corresponding week, 1929
Policies in force	75, 893, 116	74, 576, 957
Number of death claims	12, 616	11, 861
Death claims per 1,000 policies in force, annual rate	8. 7	8. 3

Deaths [1] from all causes in certain large cities of the United States during the week ended August 9, 1930, infant mortality, annual death rate, and comparison with corresponding week of 1929. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

[The rates published in this summary are based upon mid-year population estimates derived from the 1930 census. The rates are not exactly comparable with similar rates published in the Public Health Reports earlier than the issue of August 22, 1930, which were based upon estimates made before the 1930 census was taken]

City	Week ended Aug. 9, 1930				Corresponding week, 1929		Death rate [2] for first 32 weeks	
	Total deaths	Death rate [2]	Deaths under 1 year	Infant mortality rate [3]	Death rate [2]	Deaths under 1 year	1930	1929
Total (78 cities)	7,290	11.0	692	[4] 55	10.1	656	12.5	13.4
Akron	24	4.9	3	27	6.8	3	8.0	9.8
Albany [5]	44	18.0	3	66	12.0	1	15.4	16.8
Atlanta	72	14.0	9	95	15.3	14	16.7	16.6
White	39		4	127		8		
Colored	33	(6)	5	79	(6)	6	(6)	(6)
Baltimore [5]	218	14.1	25	85	13.0	21	14.7	15.5
White	158		18	77		19		
Colored	60	(6)	7	113	(6)	2	(6)	(6)
Birmingham	59	11.9	5	47	13.9	10	14.4	17.1
White	37		1	15		4		
Colored	22	(6)	4	95	(6)	6	(6)	(6)
Boston	181	12.0	18	51	10.0	16	14.7	16.1
Bridgeport	17	6.0	2	34	11.7	5	11.7	12.9
Buffalo	129	11.7	12	53	11.9	10	13.5	14.7
Cambridge	24	11.0	4	74	7.4	2	12.4	13.4
Camden	34	15.1	3	54	8.0	2	14.5	15.2
Canton	13	6.4	2	50	5.0	1	10.5	12.0
Chicago [5]	647	9.9	67	59	9.3	65	10.9	11.9
Cincinnati	118	13.7	10	59	14.2	9	16.1	17.9
Cleveland	169	9.8	15	45	8.5	20	11.6	13.3
Columbus	62	11.1	7	68	15.1	8	16.7	15.7
Dallas	61	12.1	14		10.1	9	12.1	12.4
White	51		12			7		
Colored	10	(6)	2		(6)	2	(6)	(6)
Dayton	30	7.8	4	89	8.7	8	10.5	12.0
Denver	79	14.3	9	94	10.4	6	14.8	15.3
Des Moines	36	13.1	3	52	9.6	2	12.3	12.1
Detroit	248	8.2	30	46	9.0	34	9.9	11.8
Duluth	24	12.4	2	54	10.3	3	11.6	11.9
El Paso	22	11.2	4		12.4	6	18.2	21.2
Erie	22	9.9	2	43	12.7	4	11.5	13.1
Fall River [5] [7]	24	10.9	2	46	10.0	3	12.9	15.1
Flint	32	10.6	6	70	5.1	6	9.5	11.1
Fort Worth	38	12.3	2		11.1	6	11.6	13.3
White	31		2			4		
Colored	7	(6)	0		(6)	2	(6)	(6)
Grand Rapids	32	9.9	5	76	9.7	0	10.9	10.5
Houston	65	11.6	9		10.8	7	12.6	13.2
White	51		9			5		
Colored	14	(6)	0		(6)	2	(6)	(6)
Indianapolis	104	14.8	5	37	12.3	11	14.9	15.2
White	80		4	35		10		
Colored	24	(6)	1	54	(6)	1	(6)	(6)
Jersey City	63	10.4	6	52	9.6	11	12.0	13.4
Kansas City, Kans	31	13.2	8	189	12.4	2	11.4	14.2
White	25		7	186		2		
Colored	6	(6)	1	217	(6)	0	(6)	(6)
Kansas City, Mo	115	15.2	3	23	12.8	7	13.9	14.6
Knoxville	35	17.1	6	141	10.1	3	14.5	14.1
White	29		6	156		3		
Colored	6	(6)	0	0	(6)	0	(6)	(6)
Los Angeles	243	10.2	22	67	12.0	23	11.4	11.8
Louisville	95	16.1	6	52	17.5	7	14.1	15.8
White	67		5	49		5		
Colored	28	(6)	1	72	(6)	2	(6)	(6)
Lowell [7]	19	9.9	2	47	8.8	1	14.2	15.3
Lynn	18	9.2	0	0	9.7	1	11.2	12.0
Memphis	73	15.1	10	119	15.6	5	18.2	19.8
White	28		5	92		2		
Colored	45	(6)	5	169	(6)	3	(6)	(6)
Milwaukee	79	7.2	6	30	8.1	7	10.2	11.7
Minneapolis	113	12.7	10	65	8.2	6	11.0	11.5

Footnotes at end of table.

Deaths [1] from all causes in certain large cities of the United States during the week ended August 9, 1930, infant mortality, annual death rate, and comparison with corresponding week of 1929. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Aug. 9, 1930				Corresponding week, 1929		Death rate [2] for first 32 weeks	
	Total deaths	Death rate [2]	Deaths under 1 year	Infant mortality rate [3]	Death rate [2]	Deaths under 1 year	1930	1929
Nashville	61	21.6	13	201	16.4	12	17.9	19.9
White	44		9	185		11		
Colored	17	(6)	4	253	(6)	1	(6)	(6)
New Bedford [7]	18	8.3	2	51	11.5	3	11.6	13.5
New Haven	43	13.8	2	39	9.0	1	13.7	13.9
New Orleans	130	14.8	7	41	17.7	15	18.2	18.4
White	84		3	27		4		
Colored	46	(6)	4	67	(6)	11	(6)	(6)
New York	1,318	9.8	103	43	8.4	94	11.4	12.1
Bronx borough	174	7.1	11	26	5.5	16	8.3	8.7
Brooklyn Borough	439	8.8	39	41	7.2	32	10.3	10.9
Manhattan Borough	538	15.2	45	74	12.2	37	17.1	17.6
Queens Borough	121	5.8	7	20	6.8	7	7.4	8.0
Richmond Borough	46	15.2	1	19	11.5	2	15.0	16.4
Newark, N. J.	91	10.7	6	31	11.4	9	12.7	13.6
Oakland	58	10.6	3	36	7.8	2	11.2	11.7
Oklahoma City	46	13.0	12	236	9.8	2	10.8	11.1
Omaha	62	15.1	3	34	9.3	2	14.3	14.3
Paterson	28	10.6	1	17	6.4	3	12.8	14.2
Philadelphia	405	10.7	47	70	9.5	28	13.0	13.9
Pittsburgh	158	12.3	21	77	9.2	13	14.4	15.6
Portland, Oreg.	65	11.3	1	12	10.4	1	12.8	13.3
Providence	52	10.8	6	55	10.8	11	13.9	15.6
Richmond	52	14.8	5	74	14.6	4	15.6	17.4
White	30		1	22		2		
Colored	22	(6)	4	175	(6)	2	(6)	(6)
Rochester	53	8.5	5	44	10.8	4	12.0	13.1
St. Louis	207	13.1	8	26	11.6	15	15.0	15.6
St. Paul	39	7.5	2	20	9.5	4	10.5	11.0
Salt Lake City [5]	32	11.9	2	31	6.0	2	13.0	13.6
San Antonio	67	13.6	12		12.8	9	16.2	15.4
San Diego	36	12.6	2	42	11.3	2	14.7	16.1
San Francisco	114	9.5	4	27	11.3	3	13.5	13.6
Schenectady	13	7.1	1	31	7.1	1	11.6	13.1
Seattle	72	10.3	7	70	9.3	4	11.2	11.4
Somerville	19	9.5	1	33	5.6	1	10.4	9.8
Spokane	15	6.8	1	26	6.3	2	12.6	13.5
Springfield, Mass.	30	10.4	4	63	8.4	2	12.7	13.3
Syracuse	43	10.8	5	62	10.4	2	12.3	13.8
Tacoma	35	17.1	0	0	9.3	0	12.9	12.2
Toledo	60	10.7	4	37	12.9	10	13.1	14.2
Trenton	36	15.3	3	56	16.2	2	17.3	18.0
Utica	34	17.3	2	57	9.7	3	15.7	16.3
Washington, D. C.	133	14.2	16	93	10.3	7	15.8	16.2
White	75		5	43		4		
Colored	58	(6)	11	195	(6)	3	(6)	(6)
Waterbury	19	9.8	3	77	6.2	4	10.2	10.1
Wilmington, Del. [7]	32	15.9	2	45	7.4	4	15.0	14.6
Worcester	42	11.1	4	52	9.4	4	13.4	13.3
Yonkers	24	9.2	4	96	10.2	3	8.4	9.5
Youngstown	36	11.0	7	110	8.8	3	10.5	12.6

[1] Deaths of nonresidents are included. Stillbirths are excluded.
[2] These rates represent annual rates per 1,000 population, as estimated for 1930 and 1929 by the arithmetical method.
[3] Deaths under 1 year of age per 1,000 live births. Cities left blank are not in the registration area for births.
[4] Data for 73 cities.
[5] Deaths for week ended Friday.
[6] For the cities for which deaths are shown by color the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.
[7] Population Apr. 1, 1930; decreased 1920 to 1930; no estimate made.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended August 16, 1930, and August 17, 1929

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended August 16, 1930, and August 17, 1929

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Aug. 16, 1930	Week ended Aug. 17, 1929	Week ended Aug. 16, 1930	Week ended Aug. 17, 1929	Week ended Aug. 16, 1930	Week ended Aug. 17, 1929	Week ended Aug. 16, 1930	Week ended Aug. 17, 1929
New England States:								
Maine	----	2	1	1	2	8	0	0
New Hampshire	----	2	----	----	1	5	0	0
Vermont	----	1	----	----	----	2	0	0
Massachusetts	44	31	1	3	55	31	1	4
Rhode Island	----	3	----	----	2	5	0	----
Connecticut	4	15	----	4	11	8	0	1
Middle Atlantic States:								
New York	48	80	----	[1] 10	39	79	18	19
New Jersey	37	57	----	4	33	19	7	2
Pennsylvania	46	56	----	----	129	76	8	17
East North Central States:								
Ohio	32	17	7	----	49	36	4	4
Indiana	6	15	----	----	5	10	1	7
Illinois	56	98	3	3	16	81	6	15
Michigan	29	45	----	2	46	57	16	6
Wisconsin	17	19	4	----	66	57	4	1
West North Central States:								
Minnesota	6	4	4	----	3	10	3	1
Iowa	2	4	----	----	----	7	1	0
Missouri	8	6	----	2	9	6	2	3
North Dakota	2	8	----	----	5	13	3	1
South Dakota	7	----	----	----	3	2	0	0
Nebraska	2	5	1	----	7	29	0	1
Kansas	7	18	----	2	14	27	1	0
South Atlantic States:								
Delaware	2	3	----	----	3	1	0	0
Maryland [2]	9	7	4	1	7	6	0	1
District of Columbia	3	8	----	2	6	2	0	0
Virginia	----	----	----	----	----	----	----	----
West Virginia	8	13	2	10	12	43	0	1
North Carolina	54	52	----	----	7	2	4	2
South Carolina	18	8	29	48	5	----	0	0
Georgia	----	24	10	6	6	5	1	1
Florida	4	11	----	----	2	1	3	0
East South Central States:								
Kentucky	----	4	----	----	----	----	0	1
Tennessee	3	21	1	14	4	4	0	0
Alabama	15	25	6	6	15	7	3	1
Mississippi	9	16	----	----	----	----	1	----

[1] New York City only.
[2] Week ended Friday.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended August 16, 1930, and August 17, 1929—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Aug. 16, 1930	Week ended Aug. 17, 1929	Week ended Aug. 16, 1930	Week ended Aug. 17, 1929	Week ended Aug. 16, 1930	Week ended Aug. 17, 1929	Week ended Aug. 16, 1930	Week ended Aug. 17, 1929
West South Central States:								
Arkansas	----	1	4	3	----	1	0	0
Louisiana	12	20	10	3	11	3	0	1
Oklahoma [2]	3	12	8	10	4	2	1	0
Texas	15	46	----	----	7	5	2	0
Mountain States:								
Montana	1	3	----	----	4	10	0	0
Idaho	----	----	1	----	----	3	0	0
Wyoming	----	1	----	----	----	2	0	0
Colorado	2	4	----	----	12	5	2	0
New Mexico	8	7	----	----	2	1	0	1
Arizona	2	1	----	----	9	2	0	3
Utah [3]	----	1	----	3	1	1	2	0
Pacific States:								
Washington	7	5	----	----	26	15	4	3
Oregon	2	7	1	1	15	----	0	2
California	42	38	----	9	85	28	3	9

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Aug. 16, 1930	Week ended Aug. 17, 1929	Week ended Aug. 16, 1930	Week ended Aug. 17, 1929	Week ended Aug. 16, 1930	Week ended Aug. 17, 1929	Week ended Aug. 16, 1930	Week ended Aug. 17, 1929
New England States:								
Maine	2	0	5	4	0	0	3	4
New Hampshire	0	0	3	2	0	0	0	0
Vermont	0	0	2	----	0	1	0	13
Massachusetts	25	0	45	45	0	0	21	9
Rhode Island	2	0	3	5	0	----	1	1
Connecticut	1	0	5	7	0	0	0	3
Middle Atlantic States:								
New York	48	32	49	51	1	2	28	36
New Jersey	3	5	16	30	0	0	16	9
Pennsylvania	9	14	62	67	0	0	56	37
East North Central States:								
Ohio	19	4	71	30	7	32	45	38
Indiana	4	1	17	17	13	25	12	8
Illinois	14	1	56	58	29	11	39	30
Michigan	6	9	41	70	20	27	8	7
Wisconsin	1	0	24	29	2	6	7	1
West North Central States:								
Minnesota	25	1	13	23	2	1	2	3
Iowa	2	1	1	8	4	10	1	25
Missouri	6	2	9	10	7	4	35	11
North Dakota	0	0	7	8	13	2	3	1
South Dakota	4	0	0	2	3	9	9	6
Nebraska	1	0	3	12	8	2	4	1
Kansas	17	1	6	17	12	2	26	14
South Atlantic States:								
Delaware	0	0	1	----	0	0	7	0
Maryland [3]	1	1	8	28	0	0	65	24
District of Columbia	0	0	4	3	0	0	5	1
Virginia	----	10	----	----	----	----	----	----
West Virginia	1	1	13	17	1	0	39	16
North Carolina	2	5	34	41	3	2	68	38
South Carolina	0	0	9	10	0	0	41	21
Georgia	2	0	7	12	0	0	50	51
Florida	0	2	3	8	0	0	6	2
East South Central States:								
Kentucky	0	0	4	26	13	11	50	39
Tennessee	0	7	7	8	0	0	104	86
Alabama	0	3	13	8	0	1	32	35
Mississippi	3	2	9	7	0	0	28	39
West South Central States:								
Arkansas	3	0	1	6	0	12	34	26
Louisiana	20	1	3	4	0	0	56	28
Oklahoma [2]	14	2	5	10	3	1	52	64
Texas	5	0	9	24	53	6	35	46

[2] Week ended Friday.
[3] Figures for 1930 are exclusive of Oklahoma City and Tulsa.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended August 16, 1930, and August 17, 1929—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Aug. 16, 1930	Week ended Aug. 17, 1929	Week ended Aug. 16, 1930	Week ended Aug. 17, 1929	Week ended Aug. 16, 1930	Week ended Aug. 17, 1929	Week ended Aug. 16, 1930	Week ended Aug. 17, 1929
Mountain States:								
Montana	0	1	9	7	1	1	2	2
Idaho	1	0	0	----	2	4	0	1
Wyoming	0	0	4	1	0	0	0	0
Colorado	6	0	7	4	0	1	10	7
New Mexico	1	0	2	1	1	0	5	5
Arizona	1	0	3	2	0	0	4	0
Utah [2]	0	0	3	1	0	1	2	0
Pacific States:								
Washington	1	0	14	12	10	21	3	8
Oregon	2	1	4	4	1	17	8	2
California	51	7	27	57	5	13	18	24

[2] Week ended Friday.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Cerebrospinal meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
May, 1930										
Florida	----	22	6	33	890	6	2	13	5	10
June, 1930										
Delaware	----	3	1	----	18	----	0	26	0	1
Florida	----	24	1	36	216	12	0	4	2	14
Montana	----	2	----	----	81	----	3	67	17	6
July, 1930										
District of Columbia	1	31	2	----	107	1	----	15	0	10
Florida	2	28	4	112	20	5	0	7	2	19
Georgia	4	17	20	421	97	62	1	21	4	248
Maryland	2	48	8	2	55	1	3	56	0	75
Massachusetts	4	134	4	5	1,207	----	26	231	0	16
New Hampshire	----	2	----	----	----	----	2	9	0	----
New Jersey	16	226	6	2	1,250	----	4	116	0	23
New York	42	329	----	10	2,795	----	46	400	43	95
Ohio	14	121	20	21	464	----	26	316	152	108
Porto Rico	----	23	23	631	31	1	0	----	0	49
Tennessee	21	18	28	420	124	51	4	51	37	296
Vermont	----	9	----	----	30	----	0	13	0	----
Wisconsin	8	43	14	----	677	----	2	141	55	5

May, 1930	Cases
Florida:	
Chicken pox	126
Mumps	359
Typhus fever	1
Whooping cough	13

June, 1930	Cases
Chicken pox:	
Delaware	18
Florida	16
Montana	21
Dengue:	
Florida	1
Dysentery:	
Florida	3
Mumps:	
Delaware	3
Florida	71
Montana	46
Paratyphoid fever:	
Florida	1
Rocky Mountain spotted or tick fever:	
Montana	5
Septic sore throat:	
Montana	2
Typhus fever:	
Florida	2
Undulant fever:	
Montana	1
Vincent's angina:	
Montana	1
Whooping cough:	
Delaware	17
Florida	16
Montana	50

July, 1930	Cases
Anthrax:	
New York	1
Porto Rico	1
Chicken pox:	
District of Columbia	15
Georgia	21
Maryland	71
Massachusetts	273
New Jersey	137
New York	604
Ohio	488
Tennessee	6
Vermont	21
Wisconsin	389
Conjunctivitis:	
Georgia	2
Diarrhea:	
Maryland	102
Diarrhea and enteritis (under 2 years):	
Ohio	44
Dysentery:	
Georgia	55
Maryland	84
Massachusetts	3
New Jersey	1
New York	7
Ohio	3
Porto Rico	17
Tennessee	83
Filariasis:	
Porto Rico	3
Food poisoning:	
Ohio	5
German measles:	
Maryland	19
Massachusetts	94
New Jersey	65
New York	258
Ohio	5
Wisconsin	78
Hookworm disease:	
Georgia	23
Impetigo contagiosa:	
Maryland	3
Tennessee	4
Lead poisoning:	
Massachusetts	4
New Jersey	12
Ohio	10
Lethargic encephalitis:	
Maryland	3
Massachusetts	1
New Jersey	1
New York	7
Ohio	4
Tennessee	4
Wisconsin	2
Mumps:	
Florida	5
Georgia	35
Maryland	42
Massachusetts	178
New Jersey	99
New York	507
Ohio	128
Porto Rico	12
Tennessee	13
Vermont	3
Wisconsin	203
Ophthalmia neonatorum:	
Maryland	1
Massachusetts	86
New Jersey	3
New York	9
Ohio	114
Porto Rico	4
Tennessee	1
Wisconsin	4
Paratyphoid fever:	
Georgia	4
New York	5
Ohio	2
Puerperal fever:	
New York	7
Ohio	3
Porto Rico	6
Tennessee	1
Rabies in animals:	
Maryland	3
New York	15
Rabies in man:	
Massachusetts	1
Ohio	1
Tennessee	1
Scabies:	
Maryland	1

Septic sore throat:	Cases
Georgia	14
Maryland	3
Massachusetts	17
New York	125
Ohio	28
Tetanus:	
Georgia	1
Maryland	1
Massachusetts	4
New Jersey	3
New York	20
Ohio	4
Porto Rico	7
Tetanus (infantile):	
Porto Rico	11
Trachoma:	
Georgia	1
Massachusetts	5
New York	2
Ohio	6
Tennessee	15
Wisconsin	1
Tularaemia:	
Georgia	1
Typhus fever:	
Dist. of Columbia	2
Florida	1
Georgia	8

Typhus fever—Continued.	Cases
Maryland	10
New Jersey	1
New York	3
Undulant fever:	
Georgia	2
Maryland	4
Massachusetts	1
New York	12
Ohio	10
Tennessee	3
Wisconsin	3
Vincent's angina:	
Maryland	6
New York	69
Tennessee	2
Whooping cough:	
Dist. of Columbia	47
Florida	3
Maryland	226
Massachusetts	680
New Jersey	339
New York	1,509
Ohio	664
Porto Rico	47
Tennessee	71
Vermont	46
Wisconsin	855

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 93 cities reporting cases used in the following tables are situated in all parts of the country and have an estimated aggregate population of more than 31,285,000. The estimated population of the 87 cities reporting deaths is more than 29,695,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended August 9, 1930, and August 10, 1929

	1930	1929	Estimated expectancy
Cases reported			
Diphtheria:			
46 States	572	902	
93 cities	231	370	427
Measles:			
45 States	1,109	944	
93 cities	306	180	
Meningococcus meningitis:			
46 States	94	115	
93 cities	52	56	
Poliomyelitis:			
47 States	256	109	
Scarlet fever:			
46 States	613	894	
93 cities	194	260	245
Smallpox:			
46 States	254	229	
93 cities	15	31	14
Typhoid fever:			
46 States	967	802	
93 cities	100	95	153
Deaths reported			
Influenza and pneumonia:			
87 cities	322	303	
Smallpox:			
87 cities	0	0	

City reports for week ended August 9, 1930

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding weeks of the preceding years. When the reports include several epidemics, or when for other reasons the median is unsatisfactory, the epidemic periods are excluded, and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If the reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1921 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviation from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND								
Maine:								
Portland	1	1	0		0	0	3	1
New Hampshire:								
Concord	0	0	0		0	0	0	0
Vermont:								
Barre	0	0	0		0	1	4	0
Burlington	0	0	0		0	2	0	0
Massachusetts:								
Boston	4	20	9		0	30	11	11
Fall River	3	2	0		0	2	0	0
Springfield	1	1	0		0	0	0	1
Worcester	0	3	1		0	1	0	0
Rhode Island:								
Pawtucket	0	0	0		0	0	0	3
Providence	2	3	4		0	6	0	1
Connecticut:								
Bridgeport	0	2	0		0	0	0	1
Hartford	0	2	0		0	1	0	1
New Haven	0	1	0		0	0	2	0
MIDDLE ATLANTIC								
New York:								
Buffalo	0	8	2		0	4	1	10
New York	14	97	44	3	4	77	17	76
Rochester		2						
Syracuse	4	2	0		0	5	2	2
New Jersey:								
Camden	1	2	2		0	7	0	2
Newark	1	7	11	1	0	1	9	3
Trenton	0	1	0		0	1	0	2
Pennsylvania:								
Philadelphia	9	29	6		0	22	19	21
Pittsburgh	3	12	6		1	18	2	5
Reading	0	0	0		0	0	1	2
EAST NORTH CENTRAL								
Ohio:								
Cincinnati	2	3	1		0	2	0	8
Cleveland	18	18	6	5	0	4	11	7
Columbus	2	2	3		0	1	0	1
Toledo	0	4	0		0	0	0	2
Indiana:								
Fort Wayne	0	1	1		0	0	0	1
Indianapolis	0	3	4		0	0	0	13
South Bend	0	1	0		0	0	0	0
Terre Haute	0	1	0		0	0	0	1
Illinois:								
Chicago	16	53	47		1	2	15	21
Springfield	0	0	0		0	0	0	0
Michigan:								
Detroit	3	25	9		0	16	9	14
Flint	3	2	0		0	11	0	2
Grand Rapids	2	1	4		0	1	1	1
Wisconsin:								
Kenosha	1	0	0		0	0	3	0
Madison	0	0	0			1	0	--
Milwaukee	0	7	1		0	7	0	6
Racine	0	1	1		0	0	0	0
Superior	2	0	0		0	0	0	0

City reports for week ended August 9, 1930—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
WEST NORTH CENTRAL								
Minnesota:								
Duluth	0	0	0		0	0	0	1
Minneapolis	3	10	3		1	2	0	0
St. Paul	2	5	1		0	1	1	0
Iowa:								
Davenport	1	0	0		0	0	0	0
Des Moines	0	1	0		0	0	0	0
Sioux City	0	0	0			0	0	
Waterloo	0	0	0			0	0	
Missouri:								
Kansas City	2	1	2		0	4	0	5
St. Joseph	0	0	1		0	0	0	2
St. Louis	3	15	7			13	3	
North Dakota:								
Fargo	0	0	0		0	1	5	0
Grand Forks	0	0	0		0	0	0	0
South Dakota:								
Aberdeen	2	0	0		0	1	0	0
Sioux Falls	0	0	0		0	0	0	0
Nebraska:								
Omaha	2	2	2		0	2	1	5
Kansas:								
Topeka	0	1	0		0	1	2	1
Wichita		0						
SOUTH ATLANTIC								
Delaware:								
Wilmington	0	0	0		0	0	0	4
Maryland:								
Baltimore	8	10	2		1	0	2	13
Cumberland	0	0	0		0	0	0	0
Frederick	0	0	0		0	0	0	0
District of Columbia:								
Washington	1	5	3		0	5	0	6
Virginia:								
Lynchburg	1	1	0		0	0	0	0
Norfolk	0	0	0		0	3	0	2
Richmond	0	3	1		2	1	0	0
Roanoke	0	0	0		1	0	0	1
West Virginia:								
Charleston	1	0	1		0	1	3	2
Wheeling	1	0	0		0	0	0	0
North Carolina:								
Raleigh	0	1	0		0	0	0	0
Wilmington	0	0	1		0	0	0	1
Winston-Salem	0	1	0		0	0	3	1
South Carolina:								
Charleston	0	0	0	1	0	0	0	1
Columbia	0	0	0		0	0	0	1
Georgia:								
Atlanta	0	3	1	1	0	0	1	3
Brunswick	0	0	0		0	0	0	1
Savannah	0	0	0		0	0	2	2
Florida:								
Miami	1	1	0	1	0	0	0	3
St. Petersburg	0	0	0		0	0	0	0
Tampa	1	1	0		1	5	0	0
EAST SOUTH CENTRAL								
Kentucky:								
Covington	0	0	0		0	1	0	0
Tennessee:								
Memphis		2						
Nashville	0	2	2		0	1	0	2
Alabama:								
Birmingham	0	2	1		0	1	0	2
Mobile	0	0	0		0	0	0	1
Montgomery	0	0	0			0	0	

City reports for week ended August 9, 1930—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
WEST SOUTH CENTRAL								
Arkansas:								
Fort Smith	0	0	0			0	0	
Little Rock	0	0	1		0	0	0	0
Louisiana:								
New Orleans	0	5	1		0	1	0	6
Shreveport	0	0	0		0	0	0	0
Oklahoma:								
Tulsa	0	1	1		0	0	0	0
Texas:								
Dallas	0	4	5		0	2	0	1
Fort Worth	0	1	0		0	0	0	3
Galveston	0	0	0		0	0	0	0
Houston		2						
San Antonio	0	1	5		0	0	1	5
MOUNTAIN								
Montana:								
Billings	0	0	0		0	1	0	0
Great Falls	0	0	0		0	1	1	0
Helena	0	0	0		0	0	0	0
Missoula	1	0	0		0	0	0	0
Idaho:								
Boise	1	0	0		0	0	0	0
Colorado:								
Denver	1	7	2		1	2	2	7
Pueblo	3	1	0		0	4	1	0
New Mexico:								
Albuquerque	0	0	1		0	0	0	0
Arizona:								
Phoenix	0	0	0		0	0	0	0
Utah:								
Salt Lake City	2	2	0		1	5	3	1
Nevada:								
Reno	0	0	0		0	0	0	0
PACIFIC								
Washington:								
Seattle	8	1	2			5	11	
Spokane	1	1	0	3		2	0	
Tacoma	0	1	8		0	4	0	2
Oregon:								
Portland	2	4	2		0	3	3	3
California:								
Los Angeles	5	23	16	4	2	16	19	8
Sacramento	0	1	0		0	2	0	0
San Francisco	6	8	2		0	2	2	4

City reports for week ended August 9, 1930—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	0	1	0	0	0	0	1	0	0	6	18
New Hampshire:											
Concord	0	0	0	0	0	0	0	0	0	0	4
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	1	0
Burlington	0	0	0	0	0	0	0	0	0	0	5
Massachusetts:											
Boston	15	8	0	0	0	11	3	1	0	41	181
Fall River	0	1	0	0	0	3	1	0	0	2	24
Springfield	1	0	0	0	0	2	1	1	0	4	34
Worcester	2	5	0	0	0	1	0	0	0	2	42
Rhode Island:											
Pawtucket	0	0	0	0	0	1	0	0	0	0	13
Providence	2	3	0	0	0	1	1	0	0	23	52
Connecticut:										0	17
Bridgeport	2	1	0	0	0	1	1	0	0		
Hartford	1	0	0	0	0	2	1	0	0	2	29
New Haven	0	0	0	0	0	2	1	0	0	0	43
MIDDLE ATLANTIC											
New York:											
Buffalo	5	2	0	0	0	7	1	0	0	32	128
New York	27	14	0	0	0	111	33	19	1	147	1,316
Rochester	4	----	0	----	----	----	1	----	----	----	----
Syracuse	2	2	0	0	0	2	0	1	0	26	43
New Jersey:											
Camden	1	0	0	0	0	1	1	1	1	0	35
Newark	4	1	0	0	0	8	1	0	0	21	92
Trenton	0	1	0	0	0	1	1	0	0	9	36
Pennsylvania:											
Philadelphia	15	11	0	0	0	30	7	0	0	0	405
Pittsburgh	7	8	0	0	0	0	2	0	0	33	158
Reading	0	0	0	0	0	1	0	0	0	9	17
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	4	5	0	2	0	13	2	2	0	0	118
Cleveland	9	10	0	0	0	16	4	3	2	63	169
Columbus	2	1	0	0	0	5	0	0	0	2	72
Toledo	2	4	1	0	0	2	2	2	0	2	61
Indiana:											
Fort Wayne	1	1	0	0	0	1	0	1	0	1	20
Indianapolis	2	1	1	4	0	4	1	0	0	21	----
South Bend	0	1	0	0	0	1	0	0	0	0	13
Terre Haute	0	1	0	0	0	1	1	0	0	0	28
Illinois:											
Chicago	27	27	0	2	0	45	5	1	0	77	647
Springfield	0	0	0	0	0	0	0	0	0	0	22
Michigan:											
Detroit	23	10	1	0	0	27	5	3	2	120	248
Flint	4	2	0	1	0	1	0	0	0	8	32
Grand Rapids	2	2	0	0	0	0	0	----	0	5	31
Wisconsin:											
Kenosha	0	2	0	0	0	0	0	0	0	20	5
Madison	0	0	0	0	----	----	0	0	----	15	----
Milwaukee	6	5	1	0	0	7	1	0	0	94	79
Racine	1	3	0	0	0	0	0	1	0	18	10
Superior	1	2	0	0	0	1	0	7	0	1	9

City reports for week ended August 9, 1930—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST NORTH CENTRAL											
Minnesota:											
Duluth	3	0	0	0	0	1	0	0	0	8	24
Minneapolis	11	0	0	0	0	2	2	1	0	1	113
St. Paul	6	1	1	0	0	1	1	0	0	5	42
Iowa:											
Davenport	0	2	0	7			0	0			
Des Moines	2	1	0	5			0	0			36
Sioux City	0	0	0	1			0	0		0	
Waterloo	0	0	0	1			0	0		0	
Missouri:											
Kansas City	2	8	0	0	0	7	2	2	0	20	115
St. Joseph	0	2	0	0	0	2	0	0	0	3	34
St. Louis	7	3	0	0	0	6	6	3	1	7	207
North Dakota:											
Fargo	1	0	0	0	0	0	0	0	0	3	7
Grand Forks	0	0	0	0	0	0	0	0	0	0	
South Dakota:											
Aberdeen	0	0	0	0	0	0	0	0	0	3	
Sioux Falls	1	0	0	2	0	0	0	0	0	0	5
Nebraska:											
Omaha	1	0	0	0	0	2	1	4	2	0	62
Kansas:											
Topeka	1	0	0	0	0	0	0	0	0	3	23
Wichita	2		0				0				
SOUTH ATLANTIC											
Delaware:											
Wilmington	0	0	0	0	0	3	0	1	0	0	32
Maryland:											
Baltimore	5	2	0	0	0	16	8	4	1	22	218
Cumberland	0	0	0	0	0	1	1	1	0	0	12
Frederick	0	0	0	0	0	0	0	0	0	0	2
District of Columbia:											
Washington	3	1	1	0	0	12	4	2	0	6	133
Virginia:											
Lynchburg	0	1	0	0	0	2	1	2	0	0	6
Norfolk	0	1	0	0	0	0	1	0	0	0	
Richmond	2	1	0	0	0	2	2	0	1	1	54
Roanoke	1	0	0	0	0	0	1	1	0	2	16
West Virginia:											
Charleston	0	0	0	0	0	0	2	4	0	8	22
Wheeling	1	0	0	0	0	1	0	0	0	0	17
North Carolina:											
Raleigh	0	0	0	0	0	3	0	0	0	2	12
Wilmington	0	1	0	0	0	0	0	1	0	16	16
Winston-Salem	1	1	0	0	0	0	2	2	0	2	13
South Carolina:											
Charleston	0	0	0	0	0	1	2	1	0	0	21
Columbia	0	0	0	0	0	1	1	0	0	2	9
Georgia:											
Atlanta	2	2	0	1	0	4	4	6	0	3	72
Brunswick	0	0	0	0	0	0	0	2	0	0	4
Savannah	0	0	0	0	0	1	1	0	0	1	28
Florida:											
Miami	0	0	0	0	0	0	1	0	0	0	19
St. Petersburg	0	0	0	0	0	0	0	0	0	0	10
Tampa	0	1	0	0	0	1	1	6	0	2	24
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	0	0	0	0	0	0	1	0	0	17
Tennessee:											
Memphis	1		1				7				
Nashville	1	0	1	0	0	4	6	2	0	0	61
Alabama:											
Birmingham	1	0	0	0	0	4	5	1	0	0	69
Mobile	0	2	0	0	0	1	1	1	0	0	25
Montgomery	0	0	0	0			1	1		0	

City reports for week ended August 9, 1930—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	0	0	0			0	0		0	
Little Rock	0	0	0	0	0	3	1	0	0	0	0
Louisiana:											
New Orleans	2	4	1	0	0	9	5	1	1	4	130
Shreveport	0	0	0	0	0	0	2	0	0	0	24
Oklahoma:											
Tulsa	0	1	0	0	0	0	2	0	0	3	
Texas:											
Dallas	2	2	0	0	0	3	4	0	0	0	61
Fort Worth	1	0	0	0	0	5	1	0	0	0	38
Galveston	0	0	0	0	0	0	1	0	0	0	15
Houston	1		0				1				
San Antonio	0	4	0	1	0	5	1	0	0	0	67
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	1	0	0	0	0	8
Great Falls	0	2	0	0	0	0	0	0	0	2	6
Helena	0	0	0	0	0	0	0	0	0	0	5
Missoula	0	1	0	0	0	1	0	0	0	1	3
Idaho:											
Boise	0	1	0	0	0	1	0	1	0	0	5
Colorado:											
Denver	2	4	0	0	0	5	1	2	0	34	79
Pueblo	1	0	0	0	0	0	0	0	0	3	18
New Mexico:											
Albuquerque	0	0	0	0	0	4	0	0	0	0	10
Arizona:											
Phoenix	0	0	0	0	0	0	0	0	0	0	
Utah:											
Salt Lake City	1	0	0	0	0	1	1	1	0	31	32
Nevada:											
Reno	0	0	0	0	0	1	0	0	0	0	3
PACIFIC											
Washington:											
Seattle	2	5	1	0			1	2		14	
Spokane	1	0	0	2			0	0		6	
Tacoma	1	4	1	0	0	0	0	0	0	1	
Oregon:											
Portland	1	0	4	2	0	3	1	1	0	0	65
California:											
Los Angeles	9	7	3	0	0	33	3	2		29	243
Sacramento	1	0	1	0	0	2	1	1	0	1	15
San Francisco	5	3	0	0	0	9	2	0	0	8	140

City reports for week ended August 9, 1930—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Maine:									
Portland	0	0	0	0	0	0	0	2	0
Massachusetts:									
Boston	0	0	0	0	0	0	1	7	0
Rhode Island:									
Providence	0	0	0	0	0	0	0	1	0
MIDDLE ATLANTIC									
New York:									
Buffalo	0	1	0	0	0	0	0	9	0
New York	17	8	1	4	0	0	15	5	0
Syracuse	0	0	0	0	0	0	0	5	1
New Jersey:									
Newark	1	0	0	0	0	0	1	0	0
Pennsylvania:									
Philadelphia	4	1	1	1	0	0	0	0	0
Pittsburgh	1	1	0	0	0	0	0	1	1
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	2	0	0	0	0	0	0	0	0
Cleveland	1	1	0	0	0	0	1	1	0
Toledo	0	0	0	0	0	0	0	1	0
Indiana:									
Indianapolis	1	0	0	0	0	0	0	0	0
Illinois:									
Chicago	4	2	0	2	0	1	2	5	2
Michigan:									
Detroit	6	4	0	0	0	0	1	2	2
Flint	0	1	0	0	0	0	0	0	0
Wisconsin:									
Kenosha	0	0	0	0	0	0	0	1	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	0	0	0	0	0	0	0	1	0
Minneapolis	2	0	0	0	0	0	0	0	0
Iowa:									
Des Moines	1	0	0	0	0	0	0	0	0
Missouri:									
Kansas City	4	2	0	0	0	0	1	7	0
St. Louis	2	2	1	0	0	0	0	2	0
North Dakota:									
Fargo	0	0	0	0	0	0	1	1	0
SOUTH ATLANTIC [1]									
Maryland:									
Baltimore [1]	0	0	0	1	0	0	2	0	0
Virginia:									
Norfolk	0	0	0	0	0	0	0	4	1
North Carolina:									
Raleigh	0	0	0	0	2	0	0	0	0
Wilmington	0	0	0	0	2	0	0	0	0
Winston-Salem	0	0	0	0	5	0	0	0	0
South Carolina:									
Charleston	0	0	0	0	3	0	0	0	0
Georgia: [1]									
Atlanta	0	0	0	0	2	1	0	0	0
Brunswick	0	0	0	0	0	1	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Nashville	3	2	0	0	0	0	0	0	0
Alabama:									
Birmingham	0	0	0	0	1	0	0	0	1
Mobile	0	0	0	0	1	0	0	0	0
Montgomery	0	0	0	0	3	0	0	0	0

[1] Typhus fever, 10 cases: 1 case at Baltimore, Md., 2 cases at Washington, D. C., 3 cases at Savannah, Ga., 4 cases at Tampa, Fla.

City reports for week ended August 9, 1930—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans	0	0	0	0	1	1	0	1	1
Oklahoma:									
Tulsa	0	0	0	0	0	0	0	1	0
Texas:									
Dallas	0	0	0	0	5	3	0	0	0
MOUNTAIN									
Idaho:									
Boise	1	1	0	0	0	0	0	0	0
Colorado:									
Pueblo	0	0	0	1	0	0	0	0	0
Utah:									
Salt Lake City	2	1	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	0	0	0	0	0	0	1	1	0
California:									
Los Angeles	1	1	0	0	1	0	1	21	0
San Francisco	0	0	0	1	0	1	0	3	1

The following table gives the rates per 100,000 population for 98 cities for the 5-week period ended August 9, 1930, compared with those for a like period ended August 10, 1929. The population figures used in computing the rates are approximate estimates, authoritative figures for many of the cities not being available. The 98 cities reporting cases have an estimated aggregate population of more than 32,000,000. The 91 cities reporting deaths have more than 30,500,000 estimated population.

Summary of weekly reports from cities, July 6 to August 9, 1930—Annual rates per 100,000 population, compared with rates for the corresponding period of 1929 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	July 12, 1930	July 13, 1929	July 19, 1930	July 20, 1929	July 26, 1930	July 27, 1929	Aug. 2, 1930	Aug. 3, 1929	Aug. 9, 1930	Aug. 10, 1929
98 cities	59	88	[2] 49	73	38	68	[3] 40	67	[4] 38	[5] 63
New England	38	79	33	83	22	58	33	54	31	45
Middle Atlantic	52	99	48	76	35	75	35	67	[6] 35	70
East North Central	87	119	66	105	49	103	[7] 49	99	48	81
West North Central	66	69	38	54	34	21	[8] 35	25	[9] 30	31
South Atlantic	29	43	[10] 43	30	35	28	37	47	16	30
East South Central	27	41	13	27	27	27	7	34	[11] 27	[5] 30
West South Central	64	84	[12] 38	69	34	99	37	95	[12] 54	118
Mountain	26	26	69	17	69	9	34	9	17	35
Pacific	61	41	38	41	33	31	[14] 65	46	66	43

MEASLES CASE RATES

98 cities	257	150	[2] 151	98	107	69	[3] 69	49	[4] 51	[5] 30
New England	421	186	235	146	175	101	97	97	91	31
Middle Atlantic	322	51	205	47	152	27	91	35	[6] 67	15
East North Central	155	351	71	210	60	149	[7] 34	84	28	58
West North Central	127	104	57	52	63	58	[8] 39	38	[9] 47	33
South Atlantic	130	49	[10] 114	43	46	17	55	11	22	9
East South Central	202	14	47	7	61	7	40	7	[11] 27	[5] 7
West South Central	19	61	[12] 11	4	7	27	11	8	[12] 14	19
Mountain	566	104	240	61	172	70	154	26	112	61
Pacific	562	152	361	109	191	77	[14] 159	43	73	24

SCARLET FEVER CASE RATES

98 cities	72	83	[2] 54	64	50	59	[3] 39	40	[4] 32	[5] 44
New England	66	83	60	56	66	56	55	63	42	52
Middle Atlantic	51	41	37	35	36	19	22	24	[6] 19	23
East North Central	115	160	87	103	76	110	[7] 50	62	46	72
West North Central	83	79	42	54	30	77	[8] 49	35	[9] 28	44
South Atlantic	62	64	[10] 45	69	37	60	40	28	18	41
East South Central	47	48	20	55	54	27	7	34	[11] 18	[5] 15
West South Central	37	42	[12] 23	72	49	57	56	38	[12] 45	42
Mountain	86	35	77	78	26	26	60	9	69	44
Pacific	50	89	57	65	45	65	[14] 46	48	45	56

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1930, and 1929, respectively.
[2] Columbia, S. C., and Fort Smith, Ark., not included.
[3] Fort Wayne, Ind., Sioux City, Iowa, and San Francisco, Calif., not included.
[4] Rochester, N. Y., Wichita, Kans., Memphis, Tenn., and Houston, Tex., not included.
[5] Montgomery, Ala., not included.
[6] Rochester, N. Y., not included.
[7] Fort Wayne, Ind., not included.
[8] Sioux City, Iowa, not included.
[9] Wichita, Kans., not included.
[10] Columbia, S. C., not included.
[11] Memphis, Tenn., not included.
[12] Fort Smith, Ark., not included.
[13] Houston, Tex., not included.
[14] San Francisco, Calif., not included.

Summary of weekly reports from cities, July 6 to August 9, 1930—Annual rates per 100,000 population, compared with rates for the corresponding period of 1929—Continued

SMALLPOX CASE RATES

	Week ended—									
	July 12, 1930	July 13, 1929	July 19, 1930	July 20, 1929	July 26, 1930	July 27, 1929	Aug. 2, 1930	Aug. 3, 1929	Aug. 9, 1930	Aug. 10, 1929
98 cities	7	8	[2] 6	13	7	8	[3] 3	7	[4] 2	[5] 5
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	0	0	0	0	0	0	[6] 0	0
East North Central	9	19	10	32	8	16	[7] 2	13	6	12
West North Central	9	15	13	21	21	21	[8] 12	6	[9] 4	10
South Atlantic	0	2	[10] 4	2	2	0	4	0	2	0
East South Atlantic	20	7	0	7	20	7	0	7	[11] 0	[5] 7
West South Central	7	15	[12] 8	0	4	8	15	4	[13] 5	0
Mountain	9	35	17	44	17	9	0	26	0	0
Pacific	43	10	21	34	26	22	[14] 20	34	5	17

TYPHOID FEVER CASE RATES

98 cities	16	14	[2] 15	18	18	18	[3] 18	19	[4] 17	[5] 17
New England	4	4	9	9	7	29	7	11	4	13
Middle Atlantic	10	7	4	10	7	7	5	11	[6] 10	11
East North Central	6	7	9	8	13	8	[7] 12	10	11	11
West North Central	9	10	23	19	47	13	[8] 23	33	[9] 20	15
South Atlantic	55	7	[10] 37	32	38	37	48	22	60	22
East South Central	94	157	67	144	74	103	121	150	[11] 54	[5] 45
West South Central	37	84	[12] 61	57	41	69	45	53	[13] 5	61
Mountain	0	9	26	52	17	44	26	9	34	9
Pacific	17	2	19	5	12	7	[14] 23	19	12	29

INFLUENZA DEATH RATES

91 cities	4	3	[10] 3	2	2	3	[15] 1	3	[4] 3	1
New England	0	2	0	0	0	2	0	0	0	0
Middle Atlantic	4	2	3	2	1	2	0	2	[6] 2	1
East North Central	3	3	2	3	3	4	[7] 1	4	1	1
West North Central	6	0	0	3	3	3	0	0	[9] 3	6
South Atlantic	2	4	[10] 0	6	4	4	5	4	9	0
East South Central	15	7	0	0	0	0	0	15	[11] 0	0
West South Central	8	4	11	20	11	4	0	8	[12] 0	0
Mountain	0	26	9	0	0	9	0	9	17	0
Pacific	3	0	6	3	3	0	[14] 5	0	6	6

PNEUMONIA DEATH RATES

91 cities	54	55	[10] 44	55	57	49	[15] 54	54	[4] 54	53
New England	40	29	35	70	40	31	38	43	42	38
Middle Atlantic	57	62	56	65	72	57	62	61	[6] 61	60
East North Central	38	50	32	40	28	38	[7] 44	47	47	43
West North Central	74	51	33	36	56	51	47	30	[9] 44	45
South Atlantic	55	58	[10] 47	54	79	60	60	51	66	41
East South Central	81	30	59	52	103	52	59	75	[11] 51	60
West South Central	84	82	50	27	77	36	61	78	[12] 56	121
Mountain	102	44	51	96	77	61	60	61	69	64
Pacific	61	53	18	63	9	25	[14] 57	50	43	41

[1] Columbia, S. C., and Fort Smith, Ark., not included.
[2] Fort Wayne, Ind., Sioux City, Iowa, and San Francisco, Calif., not included.
[4] Rochester, N. Y., Wichita, Kans., Memphis, Tenn., and Houston, Tex., not included.
[5] Montgomery, Ala., not included.
[6] Rochester, N. Y., not included.
[7] Fort Wayne, Ind., not included.
[8] Sioux City, Iowa, not included.
[9] Wichita, Kans., not included.
[10] Columbia, S. C., not included.
[11] Memphis, Tenn., not included.
[12] Fort Smith, Ark., not included.
[13] Houston, Tex., not included.
[14] San Francisco, Calif., not included.
[15] Fort Wayne, Ind., and San Francisco, Calif., not included.

FOREIGN AND INSULAR

CANADA

Quebec Province—Communicable diseases—Week ended August 9, 1930.—The Bureau of Health of the Province of Quebec, Canada, reports cases of certain communicable diseases for the week ended August 9, 1930, as follows:

Disease	Cases	Disease	Cases
Chicken pox	5	Poliomyelitis	1
Diphtheria	19	Scarlet fever	36
Erysipelas	6	Tuberculosis (pulmonary)	43
Measles	7	Tuberculosis (other forms)	13
Mumps	3	Typhoid fever	21
Ophthalmia neonatorum	1	Whooping cough	51

Ontario Province—Communicable diseases (comparative)—Four weeks ended July 26, 1930.—The following table shows the number of cases of certain communicable diseases, with deaths therefrom, reported in the Province of Ontario, Canada, for the four weeks ended July 26, 1930, as compared with the corresponding period of 1929:

Disease	4 weeks, 1930		4 weeks, 1929	
	Cases	Deaths	Cases	Deaths
Cerebrospinal meningitis	8	4	1	3
Chicken pox	556		547	
Conjunctivitis			5	
Diphtheria	165	6	184	11
Dysentery				1
German measles	47		7	
Goiter	4			
Gonorrhea	181		262	
Influenza	6	4	8	3
Lethargic encephalitis	2	2		
Measles	489		954	3
Mumps	40		137	
Paratyphoid fever	8	1		
Pneumonia		61		91
Poliomyelitis	12	4	1	
Puerperal septicemia	2			
Scarlet fever	272	3	164	
Septic sore throat			19	
Smallpox [1]	24		57	
Syphilis	198		208	
Tetanus	1	2		
Tuberculosis	132	37	116	35
Typhoid fever	37	1	23	2
Undulant fever	10			
Whooping cough	261	1	347	

[1] Cases of smallpox for this period were distributed as follows: Ottawa, 6; Gloucester, 4; Woolwich, 4; Kingston, 3; Holland, 2; 1 case in each of the following places, Niagara Township, Mount Forest, Toronto, Alexandria, and Nepean.

British Columbia—Psittacosis.—During the month of May, 1930, 7 cases of psittacosis were reported in the municipalities of Burnaby and New Westminster, near Vancouver, B. C. These cases were investigated and found to have had contact with sick parrakeets before the onset of the disease. The parrakeets were all purchased from a steamer which had brought them to Vancouver from the Orient.

CHINA

Meningitis.—During the two weeks ended August 2, 1930, 12 cases of meningitis, with 9 deaths, were reported in Canton, China.

GERMANY

Vital statistics—1929.—According to a recent report the births, deaths, and marriages in the German Reich (provisional figures) for 1929 as compared with 1928 were as follows:

	1929	1928
Births	1,146,706	1,182,815
Stillbirths	36,189	37,962
Deaths (excluding stillbirths)	805,973	739,520
Marriages	589,451	587,175

The reduced number of births, as compared with 1928, as well as the increased number of deaths during the first three months of 1929, were attributed to the severe influenza epidemic which prevailed at that time.

The following table, which shows the deaths from certain causes in German cities of over 15,000 population for the four quarters of the years 1928 and 1929, reflects the influence of the influenza epidemic in the high death rates reported for the first quarter of the year 1929.

Death rates per 10,000 in German cities of over 15,000 population

Cause of death	Quarters, 1928				Quarters, 1929			
	First	Second	Third	Fourth	First	Second	Third	Fourth
Accidents	3.1	3.4	3.7	3.3	3.3	3.6	3.9	3.2
Apoplexy	9.0	8.1	7.0	8.3	10.4	8.0	6.7	8.0
Cancer	12.7	12.8	12.4	12.8	13.3	12.8	12.7	12.9
Diphtheria	.6	.6	.6	1.0	.9	.7	.7	1.3
Heart diseases	15.9	14.4	11.6	14.1	20.4	14.1	11.5	13.4
Influenza	1.3	1.5	.5	1.2	15.6	1.2	.4	.8
Measles	.4	.3	.2	.2	.4	.4	.4	.4
Pneumonia	10.6	8.6	5.0	7.1	18.9	8.4	4.9	6.8
Other diseases of respiratory organs	4.5	3.4	2.0	3.2	7.5	3.4	1.9	2.9
Scarlet fever	.3	.3	.2	.2	.3	.2	.2	.2
Senility	8.0	7.2	5.6	6.8	12.7	7.1	5.6	5.9
Suicides	2.6	2.8	2.6	2.4	2.5	2.9	2.9	2.7
Tuberculosis	9.9	9.6	7.9	7.9	10.4	9.6	7.6	7.5
Whooping cough	.4	.3	.3	.3	.7	.3	.2	.4

MEXICO

Tampico—Communicable diseases—July, 1930.—During the month of July, 1930, certain communicable diseases were reported in Tampico, Mexico, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Diphtheria		1	Smallpox	1	
Enteritis (various)		63	Tuberculosis	47	28
Influenza	3		Typhoid fever	4	4
Malaria	242	12	Whooping cough	5	
Measles		5			

TRINIDAD (BRITISH WEST INDIES)

Port of Spain—Vital statistics (comparative)—June, 1930.—The following statistics for the month of June for the years 1929 and 1930 are taken from a report issued by the Public Health Department of Port of Spain, Trinidad:

	June, 1929	June, 1930		June, 1929	June, 1930
Number of births	153	150	Deaths under 1 year	31	18
Birth rate per 1,000 population	28.0	27.1	Infant mortality rate per 1,000 births	202.6	120.0
Number of deaths	143	110			
Death rate per 1,000 population	26.2	19.9			

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

From medical officers of the Public Health Service, American consuls, International Office of Public Hygiene, Pan American Sanitary Bureau, health section of the League of Nations, and other sources. The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA

[C indicates cases; D, deaths; P, present]

Place		Feb. 9–Mar. 8, 1930	Mar. 9–Apr. 5, 1930	Apr. 6–May 3, 1930	Week ended— May, 1930				June, 1930				July, 1930				August, 1930		
					10	17	24	31	7	14	21	28	5	12	19	26	2	9	16
Afghanistan	C													[1] P					
China:																			
Canton	C					1	1	1		2				2	1				
Manchuria—Dairen	C	1																	
Swatow	C							3	4	3									
India	C	5,914	10,817	41,462	15,596	14,600	12,468	13,647	10,088	10,103	10,162								
	D	3,371	5,866	27,906	12,782	11,882	9,756	10,458	7,802	7,110	6,455								
Bassein	C			7	3	4													
	D			5	3	2													
Bombay	C		4															2	
Calcutta	C	269	354	647	194	175	142	98	78	73	94	77	81	53	49	37			
	D	153	220	414	125	107	83	57	44	36	36	63	54	28	23	23			
Negapatam	C									1									
	D									1									
Rangoon	C	3	2	1		5	2	2	1	1	2	2	1						
	D	1	2	1		1		2	1	1	1	1	1						
India (French):																			
Chandernagor	C	4	1	6	2	2	2				1	2							
	D	2	3	5	1	4	1				1	1							
Karikal	C	4	12	1								3							
	D	1	9	1								3							
Indo-China (see also table below):																			
Pnompenh	C	9		2	1				5	10	11	14	9	16	7		5		
	D	7	6			2	2	1	1	4	7	6	6	9	5	2	3		
Saigon and Cholon	C	5	14	76	59	40	48	13	17	19	7	5	7	1	1	1	2		
	D	4	6	55	43	27	24	7	11	10	2		3						

[1] An outbreak of cholera was reported in June, 1930, in Afghanistan.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

CHOLERA—Continued

[C indicates cases; D, deaths; P, present]

Place		Feb. 9–Mar. 8, 1930	Mar. 9–Apr. 5, 1930	Apr. 6–May 3, 1930	Week ended— May, 1930				June, 1930				July, 1930				August, 1930		
					10	17	24	31	7	14	21	28	5	12	19	26	2	9	16
Philippine Islands: [2]																			
Ports—																			
Cebu	C											1	20	13	13	9	5	4	
	D												9	7	12	8	4	1	
Iloilo	C													1	11	17	9	10	32
	D														9	13	10	18	19
Manila	C							1										1	
Provinces—																			
Antique	C																14	4	
	D																7	4	
Bohol	C																	45	67
	D																	26	37
Bulacan	C								1			2				3			
	D								1										
Capiz	C																3	1	
	D																2	1	
Cebu [3]	C							1	13	26	118	198	313	205	121	57	63	37	4
	D							1	11	23	50	86	131	78	61	35	37	27	3
Iloilo [3]	C										1	1	20	3	75	66	250	227	178
	D											1	10	3	54	49	146	164	119
La Union	C													1					
Leyte [3]	C										21	26	6						
	D										12	7	7						
Masbate [3]	C											10	14	25	8	20	37	27	
	D											3	2	15	2	4	18	11	
Misamis, Occidental [3]	C												1	2					
	D												1	2					
Negros, Occidental [3]	C						1	9	5	55	50	30	62	90	193	165	178	99	50
	D						1	6	2	27	36	23	42	48	134	104	118	72	34
Negros, Oriental	C															17	9	2	
	D														1	9	3	3	
Nueva Ecija	C															1			
	D															1			
Pampanga	C										1	1	2						

Pangasinan	C													2		1					
	D													2							
Rizal	C									1											
	D									1											
Samar	C																		5	4	
	D																		5	3	
Surigao	C																		15	4	
	D																		9	2	
Tarlac	C																	2			
Siam	C	7	1	29	12	4	13	4	8	10	6	3	8								
	D	4		13	10	2	7	2	3	9	4	3	4								
Bangkok	C	2	2	15			6	3	5	3	3	1		3	4	1	1				
	D		1	4			2	1		3		2		1	1	1	1				
Nagara Pathom	C	1		10																	
	D	1		2																	
Songkla	C													3		2					
	D													4		2					
On vessel:																					
S. S. at Suva, Fiji Islands	C	1																			
S. S. Sutley, at Batavia, from Calcutta	C	1																			
S. S. Sassari, at Massoua, from Jeddah	C							1													
	D							1													
On small boat at Port Cebu, from Bantayan Island	C								1												
	D								1												

Place		January, 1930	February, 1930	March, 1930			April, 1930			May, 1930			June, 1930	
				1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20
Indo-China (French) (see also table above):														
Annam [1]	C	1	4		52				60		20	3	2	14
Cambodia [1]	C	147	90	49	32		18	6		5	31	52	56	88
Cochin-China [1]	C	177	65	5	22	55	48			188	224	259	147	126

[1] Reports incomplete.
[2] Figures for cholera in the Philippine Islands are subject to correction.
[3] Figures for cholera in the Philippine Islands up to July 5 have been corrected since the last issue from late reports.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE

[C indicates cases; D, deaths; P, present]

Place		Feb. 9–Mar. 8, 1930	Mar. 9–Apr. 5, 1930	Apr. 6–May 3, 1930	Week ended— May, 1930				June, 1930				July, 1930				August, 1930	
					10	17	24	31	7	14	21	28	5	12	19	26	2	9
Algeria:																		
Algiers	C													1	2			
Constantine	C								1				1					
Oran	C														2	1		
Argentina:																		
Andalgala.[1]																		
Villa Lia	D	2																
Azores: Ponta Delgada	C			8														
	D			5														
Belgian Congo	C												2				1	
	D												2					
British East Africa (see also table below):																		
Tanganyika	C	7		44														
	D			20														
Uganda	C	47	98	117	54	89		84	121	77	105	103						
	D	43	87	105	48	75		72	75	70	93	90						
Canary Islands: Las Palmas	D																	1
Ceylon:																		
Colombo	C	3	4	1	4	1		1	1				1	2				
	D	3	4	1	3	1		1	1				1	2				
Plague-infected rats		3	2	4					1									
Chile: Antofagasta	C	1	1	1														
	D		2	1														
Dutch East Indies:																		
Batavia and West Java	C	153	124	87	18	33	17	14	19	27	28	24	19					
	D	150	122	81	18	33	17	14	19	27	28	24	19					
Plague-infected rats		3	3	8			3	2	3	1								
Java and Madura	D	296	228	173	28	74	36	48	40									
Ecuador (see table below).																		
Egypt:																		
Alexandria	C	1	4	2	2	3	3	5	3	6	6	4	8	8	3	4	2	2
	D		1	2			1	2	2		2	5	2	3	2	3	2	1
Assiout	C			14	3	9	2	6	4	2	3		1	1				
	D			5		3	1	1		1		2	1	1				
Beheira	C		4															

Beni-Suef	C		4																
Dakahlieh	C	8	5	5	3	1	2	5	1										
	D		1			1	1												
Gharbieh	C			1														3	
	D			1														1	
Girga	C			1											1				
Minieh	C						6	1	1	1	4	4	2	1					
	D							1		1									
Port Said	C			1		1	1		1			1				1	1		
France: St. Ouen	C															1			
	D															1			
Greece (see also table below):																			
Patras	C		1								1					1			
Pyrgos	C		1																
Hawaii Territory, Hamaqua, Hawaii: Plague-infected rats											1								
India	C	5,639	4,087	2,215	281	188	117	62	55	59	62								
	D	3,940	3,344	1,960	271	205	103	56	42	52	43								
Bassein	C		3																
	D		1																
Bombay	C	1	7	4	4	1		1	1		2						1		
	D	1	5	8	1	4					1	1					1		
Plague-infected rats		31	86	108	23	39		19	6	7	8	5	13	14	10	15	10		
Madras Presidency	C	230	157	44	2		6	30	26	10	3			1	10				
	D	140	87	19		1	4	6	15	2	5			1	9				
Rangoon	C	7	3	5		1	3					1				2	2		
	D	6	3	4	1	1	1					1				2	1		
Plague-infected rats		7	3	4	1	3	1				1		2	2		2	4		
India (Portuguese)	D				7														
Indo-China (see also table below):																			
Pnompenh	C			3	1			2	6					1	1				
	D	13	13	4			1		5	1		1		1	1				
Saigon and Cholon	C		1		1				1		1								
	D		1								1								
Iraq: Baghdad	C	6	7	6	7	11	7	12	12	4	8	4	10	4	2	2	4	3	
	D	1	4	2	3	5	4	6	7	3	5		5		1	1		2	
Japan: Osaka (vicinity of)—Plague-infected rats		6	4	3															
Kwang-Chow-Wan	C	25	7	37		20		14	23		8								
Madagascar (see also table below): Tamatave	C			1					1										
Morocco	C	48	55	121	19	22	18	12	2		1								
	D	13	18	45	11	14	6	3	4										
Nigeria: Lagos	C	7	13		1	1			1		3	1	1						
	D	7	5		1	1			1		3	1	1						
Plague-infected rats		42	25	7	2	6	5	4	1	4	1	5							
Senegal (see table below).																			
Siam	C	17	16	5		1	1	3											
	D	13	15	6		1		3											
Bangkok	C	1	5			1	1	3										1	
	D	1	4			1		3											
Nagara Pathom	C	5	1	10															
	D	6	1	9															

[1] On Mar. 11, 3 deaths from bubonic plague were reported in Andalgala, Catamarca Province, Argentina, since Feb. 5, 1930.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

Place		Feb. 9–Mar. 8, 1930	Mar. 9–Apr. 5, 1930	Apr. 6–May 3, 1930	Week ended—													
					May, 1930				June, 1930				July, 1930				August, 1930	
					10	17	24	31	7	14	21	28	5	12	19	26	2	9
Siam—Continued.																		
Nagara Rajsima	C	2	1	1													1	
	D		1	1														
Syria: Beirut	C									2	5	5		2	4	3		1
Tunisia:																		
Sfax district	C	22		1	17			4	6		3					6		
Tunis	C	5	1	4				1		1				1	4			
	D								1					1				
Union of Socialist Soviet Republics:																		
Saisk Region	C								1			1						
	D								1									
Stavropol Region	C								1									
	D								1									
Union of South Africa:																		
Cape Province	C	2	1		P				1									
	D	1	1															
Orange Free State	C	11	5	1														
	D	3	3															
Transvaal	C	2	1															
	D		1															

Place		February, 1930	March, 1930	April, 1930	May, 1930	June, 1930	July, 1930
British East Africa (see also table above):							
Kenya	C	69	85	16	171	107	------
Uganda	C	109	------	------	------	------	------
	D	90	------	------	------	------	------
Ecuador: Guayaquil	C	2	2	0	------	------	------
	D	2	------	0	------	------	------
Plague-infected rats		2	2	0	------	------	------
Greece (see also table above)	C	------	------	1	------	1	------
Indo-China (see also table above)	C	30	27	4	------	11	------
Madagascar (see also table above):							
Ambositra Province	C	49	25	14	1	------	------
	D	41	20	12	1	------	------
Antisirabe Province	C	22	38	46	19	------	------
	D	22	36	45	19	------	------
Itasy Province	C	------	4	------	------	------	------
	D	------	4	------	------	------	------
Miarinarivo Province	C	25	14	1	5	------	------
	D	25	14	1	5	------	------

Place		February, 1930	March, 1930	April, 1930	May, 1930	June, 1930	July, 1930
Madagascar (see also table above)—Continued.							
Moramanga Province	C	7	5	3	1	------	------
	D	4	5	3	------	------	------
Tananarive Province	C	110	52	39	15	------	------
	D	107	52	38	14	------	------
Senegal:							
Baol [1]	C	------	18	24	13	2	21
	D	------	8	12	11	2	11
Dakar [1]	C	------	------	2	52	53	90
	D	------	------	2	42	117	77
Louga [1]	C	2	------	33	54	60	88
	D	------	------	10	27	21	58
Thies [1]	C	------	3	12	21	52	24
	D	------	2	9	8	35	16
Tivaouane [1]	C	------	11	71	135	43	91
	D	------	8	38	60	28	49

[1] Incomplete reports.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX

[C indicates cases; D, deaths; P, present]

Place		Feb. 9–Mar. 8, 1930	Mar. 9–Apr. 5, 1930	Apr. 6–May 3, 1930	Week ended— May, 1930 10	17	24	31	June, 1930 7	14	21	28	July, 1930 5	12	19	26	August, 1930 2	9
Algeria:																		
Algiers	C	1	5	1		1		2										
Constantine	C										1				1			
Oran	C		1															
Arabia: Aden	C	2	3	1									1					
Bolivia: La Paz.[1]																		
British Borneo: Sarawak	C	19																
British East Africa (see also table below):																		
Tanganyika	C	49	103	57	33	45	55	276	385	755	196	274	64					
	D	8	7	14	3	5	8	54	154	90	31	26	13					
British South Africa:																		
Northern Rhodesia	C		9	1			57	2										
	D			2			9											
Southern Rhodesia	C	6		66	58		42	60	75	1	3							
	D			1	4		8	1										
Canada:																		
Alberta	C	4	10	4										2	1	2	1	
Edmonton	C	1	4	3														
British Columbia—Vancouver	C	16	20	17			2	2	1	1			2	2	1	1	1	
Manitoba	C	2	4	4			7	3			4							
Ontario	C	86	100	77	14	24	24	20	14	10	13	10	3	5	6	10	8	
North Bay	C	1			1													
Ottawa	C	11	19	21	3	10	7	5	6		8	1	1	1	4	7	5	1
Toronto	C						3	1	2	1	1			1				
Quebec	C											4	3					
Montreal	C																7	
Saskatchewan	C	76	47	41	20	6	10	3		12	10			2		3		
Regina	C				1		3											
Ceylon:																		
Angoda, Western Provinces	C	10		6														
	D	1		2														
Colombo	C	3																
	D	2																
China:																		
Canton	C	11	6	3					1									
	D	3	2	3														

Chungking	C	P		P	P		P	P	P			P	P					
Foochow	C	P		P		P		P		P		P						
Hong Kong	C	62	38	18	5	5	2		2	1	1			2				
	D	51	25	23	4	2	3		1		1	1		1				
Manchuria—																		
Harbin	C			1		10	10											
Kwantung—Dairen	C	5		2	1		7			11	5		6					
	D						4				1							
Nanking	C	P	P	P	P			P	P	P				P	P			
Shanghai—																		
Foreigners only	C	2	2	3		1	1		1	1	1	2	1	1	1	1	3	
Including natives	D	7	10	10		1	2	2	1		1	1						
Swatow	D	6	6	3	1		1	4	1		1	2	1					
Tientsin	C	1	2	2	1													
Chosen (see table below).																		
Colombia:																		
Barranquilla	C	102	2	1														
Buenaventura	C	1		15	2		1	1	1	1		4	4	3	2	1		
Costa Rica:																		
Port Limon	C			6				2	2									
San Jose [2]	C		10	7														
Curacao (alastrim)	C		14	2	2					1			2					
Dahomey (see table below).																		
Dutch East Indies:																		
Borneo	C		185	90		10	4	2	2	10				2				
	D		12	31	1					1								
Java—																		
Batavia and West Java	C	14	78	64	1	1	5	5	1	4	6	2	3	1	3	1	1	
	D	7	6	11	1	1	3	2		1	2		2	1	1	1	1	
East Java and Madura	C			4											1			
Sanggi Islands	C	12	5	160	14	12												
	D		1	24	1	4												
Sumatra	C		48															
	D		5															
Egypt: Port Said	C			1		1								2		1		
Great Britain:																		
England and Wales	C	1,530	1,700	1,427	462	324	364	327	237	226	241	182	156	138	126	109	70	
Ashton under Lyne	C	29	15	18	6	3	4	4			3	4		4	2	2		
Bradford	C	2		3		1		1					1					
Cardiff	C		2	3									2					
Leeds	C	11	16	2									1					
London	C	699	710	602	222	138	148	129	130	136	125	107	84	52	62	48	36	
London and Great Towns	C	1,156	1,239	1,066	839	250	235	254	197	206	190	156	127	96	102	83	61	
	D	5	3	3														
Sheffield	C		8	2														
Stoke-on-Trent	C	41	122	85	19	9	13	21	3	10	15	4	3	2	1	3	1	
Scotland	C								1		3			1				
	D													1				

[1] From Jan. 1 to May 31, 1930, 44 deaths from smallpox were reported in La Paz, Bolivia.
[2] 5 cases of smallpox were reported Apr. 14, 1930, in Costa Rica outside of city of San Jose.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		Feb. 9–Mar. 8, 1930	Mar. 9–Apr. 5, 1930	Apr. 6–May 3, 1930	Week ended— May, 1930 10	17	24	31	June, 1930 7	14	21	28	July, 1930 5	12	19	26	August, 1930 2	9
India	C	36,036	39,329	34,843	6,533	6,549	5,416	4,337	3,686	3,559	3,174							
	D	7,710	9,109	6,983	1,449	1,814	1,196	993	1,065	913	905							
Bombay	C	638	718	430	52	68	58	40	36	35	23	19	17	15	11	7	6	
	D	314	431	270	33	49	44	35	27	23	19	10	13	9	9	2	5	
Calcutta	C	399	361	495	109	70	52	71	46	45	45	25	27	19	13	14		
	D	287	305	403	94	72	40	52	50	37	29	30	17	17	12	10		
Cochin	C	184	291	183	13	8	7	9	4	1	10	1			4	2	2	
	D	29	35	13	5	1	2		2	1	1							
Karachi	C	38	33	30		6	7	1	5		1	1				1	2	
	D	16	47	17	2		1	1	2		1						2	
Madras	C	159	173	133	24	13	15	20	9	10	8	8	6	10	17	16	19	
	D	29	36	27	4	5	6		6	3	1		4	1	3	4	3	
Moulmein	C	143	146	43	27	29	20	13		9	6	6	4	10	3	1		
	D	40	41	7	4	6	5	6		3	3	1	3	4	1	2		
Negapatam	C	1					1			1		1			1		2	
Rangoon	C	7	10	4	2		3	1	1	5	1	2	2	1	1			
	D	2	5		1						1	1						
Tuticorin	C						5				1							
Vizagapatam	C	9	69	6	3	1	1			1								
	D	1	18	2		3												
India (French):																		
Chandernagor	C	11	6	10	6	2	8	8	4	8	5	2	3	1	4			
	D	5	2	2	2	4	1				2	1	1	1	1			
Karikal	C	12	24	19	6	5	1		4	3	1	3	1		1			
	D	8	7	8	2	1			2	2	1	3	1		1			
Pondicherry Province	C	52	21	24	9	13	10	8	4	4	9	6	4	9	8	5		
	D	40	13	20	7	12	10	7	4	4	9	6	3	9	8	5		
India (Portuguese)	C	50	38	44	2	27	5	13		3	18	7	1					
	D	5	2	8		3	1	4		2	2	6						
Indo-China (see also table below):																		
Pnompenh	C				1		1	1							1			
	D			2					1						1			
Saigon and Cholon	C	4	3	5	1	1		1	1									
	D	2	1	5		1		1										1
Iraq:																		
Baghdad	C	3		8	1				1				1					
	D	1		1	1													
Basra	C	1		1														

Mossoul Liwa	C	12		22	13		8			1		3	47	20					
	D	2		3	2		1			1			19	1					
Ivory Coast (see table below).																			
Jamaica (alastrim)	C							2											
Japan: Tokyo	C			1															
	D			1															
Macao	D	2	3	2	1														
Mexico (see also table below):																			
Jalisco (State) Guadalajara	D	14	22	20			6	1	4		5	6	3	1					1
Juarez	C	3	2								6								
	D	1									1								
Mexico City and surrounding territory	C	38	106	99	30	15	17	18	17	23	20	17	10	12	4				
	D	21	31	47	6	12	8	6	5	4	3	5	2	3	1				
Progreso	C						1												
	D						1				1								
San Luis Potosi	C	1																	
	D	1																	
Morocco (see table below).																			
Nigeria: Lagos	C	2	1	1								1							
Philippine Islands: Sarangani and Balut Islands	D	3																	
Poland	C	2		7		1		2											
Portugal: Lisbon	C	7	7	8	6		2		1		2	7		7					
Rumania	C	1	2																
Siam	C	2		8	2								2						
	D			4															
Somaliland, British: Boales	C	19	2																
	D	2	6																
Spain	C									4		8		1	1	3			
Straits Settlements	C		5	5	1	3	2	5	5		1	3	1	2	7	1	1	1	
	D		1	2		1	1	1	1		1		1	1	1				
Sudan (Anglo-Egyptian)	C	79	60	42		5	13	1	4	8	1	54	8	1		3			
	D	6	5	4			1	1				3		1					
Sudan (French) (see table below).																			
Switzerland: Berne Canton	C															1			
Syria (see table below).																			
Taiwan: Taihoku (see table below).																			
Tunisia: Tunis	C	3	3	4		1		1			2					1			
Turkey (see table below).																			
Union of South Africa:																			
Cape Province	C	P	P	P	P	P	P	P											
Orange Free State	C	P	P																
Transvaal	C	P	P																
Upper Volta	C	26	2	3				1			8	5							
Zanzibar	C		13																
On vessel:																			
S. S. Pairea, at Liverpool, from London	C	1																	
S. S. Karagola, at Lourenco Marques, from India	C	1																	
S. S. Elysia, at Port Sudan, from Bombay	C			1															
S. S. Naldera, at Port Said	C				1														
S. S. Manoa, from Honolulu to San Francisco	C											1							

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		January, 1930	February, 1930	March, 1930			April, 1930			May, 1930			June, 1930			July, 1930	
				1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20
Indo-China (see also table above)	C	460	434	-------	-------	26	261	-------	-------	-------	173	132	80	133	-------	-------	-------
Ivory Coast	C	-------	-------	-------	7	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Sudan (French)	C	229	213	-------	200	409	371	-------	150	40	56	178	76	-------	-------	-------	34
	D	25	11	-------	18	31	30	-------	6	7	7	18	18	-------	-------	-------	-------
Syria: Beirut	C	70	18	4	8	5	10	2	7	-------	-------	7	6	1	-------	-------	-------
Taiwan: Taihoku	C	-------	43	31	12	15	10	2	-------	-------	-------	-------	-------	-------	-------	-------	-------

Place		January, 1930	February, 1930	March, 1930	April, 1930	May, 1930	June, 1930
British East Africa (see also table above):							
Kenya	C	12	12	175	174	-------	-------
Uganda	C	184	109	-------	-------	78	-------
	D	155	99	-------	-------	69	-------
Chosen	C	1	4	-------	5	-------	-------
	D	-------	1	-------	1	-------	-------

Place		January, 1930	February, 1930	March, 1930	April, 1930	May, 1930	June, 1930
France	C	9	23	8	-------	3	-------
Mexico: Durango (see also table above)	D	12	6	5	4	4	3
Morocco	C	29	74	-------	10	18	5
Turkey	C	215	114	-------	3	16	-------
	D	66	42	-------	-------	-------	-------

TYPHUS FEVER

[C indicates cases; D, deaths; P, present]

Place		Jan. 12-Feb. 8, 1930	Feb. 9-Mar. 8, 1930	Mar. 9-Apr. 5, 1930	Apr. 6-May 3, 1930	Week ended— May, 1930 10	17	24	31	June, 1930 7	14	21	28	July, 1930 5	12	19	26	August 2, 1930
Algeria:																		
Algiers	C	3	4	6	8	1	2	4	8	2		1			1	2	3	
Constantine Department	C	4	5	11	15		4		2	11		1			1	1		
Oran	C	2							3				4		2	1		
Arabia: Aden	C			1														
	D			1														
Bolivia: La Paz.[1]																	P	
Brazil: Porto Alegre	C		2			1												
Bulgaria	C		13	9	15	1		5		1		9	6		4	5	1	
	D		1		1	1		1		1						1		
Sofia	C	1																
Chile:																		
Talcahuano	D	1																
Valparaiso	C	1																
China:																		
Manchuria—Harbin	C		1	4	52													
Shanghai	C			1														
Tientsin	C	1																
Chosen (see table below).																		
Czechoslovakia (see table below).																		
Egypt:																		
Alexandria	C				1							1	1	1				
Beheira Province	C	14	18	2	2	9	21	9	10	17	16	7	5		5	1	9	
	D		5			4	4	4	1	1	1		2		1		1	
Cairo	C		1															
Port Said	C	2	1															
Suez	C	1																
Great Britain: Scotland—																		
Dunfermline	C														1			
Glasgow	C						1											
	D						1											
Greece (see table below).																		

[1] 12 deaths from typhus fever were reported in La Paz, Bolivia, from Jan. 1 to May 31, 1930.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

TYPHUS FEVER—Continued

[C indicates cases; D, deaths; P, present]

Place		Jan. 12–Feb. 8, 1930	Feb. 9–Mar. 8, 1930	Mar. 9–Apr. 5, 1930	Apr. 6–May 3, 1930	Week ended— May, 1930				June, 1930				July, 1930				August
						10	17	24	31	7	14	21	28	5	12	19	26	2
Iraq: Baghdad Liwa	C			2														
Ireland:																		
Irish Free State—																		
Galway County—Oughterard	C																2	
Kerry County—Dingle	C				5													
Leitrim County—Mohill	C												9				1	
Mayo County—																		
Ballina	C								2		1				1			
Swinford	C						7	7										
Westport	C															2		1
Roscommon County—																		
Roscommon	C															1		
Strokestown	C															1		
Wicklow County—Shillelagh	C										1		3	1		1		
Northern Ireland—Cookstown	C		3															
Latvia (see table below).																		
Lithuania (see table below).																		
Mexico: Mexico City, including municipalities in Federal District	C	12	9	4	4		2		4	2	3	1	3	2		2		
	D	4		1	4				3		1							
Morocco	C	23	21	38	15	3	6	1	1	1		6	8		4	3	4	
	D			7	3													
Palestine	C		1	6	1		2			2				3	1	1	1	
Poland	C	296	183	228	243	64	45	34	28	39	15	26	37		24		12	10
	D	21	8	13	15	2	2		1	3	3	2	3		4			1
Portugal:																		
Lisbon	C				4													
Oporto	C		1	2	1													
Rumania	C	241	293	185	186	60	58	61	48		32							
	D	25	23	12	11	10	11	6	8		3							
Spain: Valencia	C										2		1		3			
	D														1			
Tunisia	C		3			2	2	1	1			2	16			14	10	2
Turkey (see table below).																		

Union of South Africa:																				
Cape Province	C	P [1]	P [3]	P	P	P	P	P	P	P			P	P	P	P				
Natal	C			P	P	P	P	P		P			P		P	P				
Orange Free State	C	P	P	P		P	P	P	P	P			P	P	P	P				
Transvaal	C				P															
Yugoslavia (see table below).																				

Place		January, 1930	February, 1930	March, 1930	April, 1930	May, 1930	June, 1930
Chosen: Seoul	C		17		3		
Czechoslovakia	C	10	2	42	29	12	
Greece: Athens	C	12	6	3	1	3	
Latvia	C	18				3	3
Lithuania	C	2	70	62	73	27	16
	D		5	4	4		
Turkey	C	2	3	1	3	16	2
Yugoslavia	C	26	33	46	22	16	6
	D	3	5	2	4	1	

YELLOW FEVER

Brazil:	Cases
Mage, on the Leopoldina Railway, between Rio de Janeiro and Nictheroy, Apr. 22, 1930	2
Campos, Rio de Janeiro Province, May 23, 1930	1
Para, June 23, 1930	2

Gold Coast:	Cases
July 10, 1930	1
Albosso, Aug. 5, 1930 (deaths)	1
Liberia, Monrovia, June 3, 1930	1
Nigeria, Lagos, July 12, 1930 (probably laboratory infection)	1

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